TECHNOLOGY DEPT:

NATIONAL PETROLEUM NEWS ~ ~

May 15, 1940

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George P. Bunn

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They demand truck qualities—

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CHEVROLET MOTOR DIVISION, *General Motors Sales Corporation*, DETROIT, MICHIGAN

CHEVROLET TRUCKS

NORMAN H. OTT

Wisconsin Petroleum Association's 32-year old president, Norman H. Ott, stepped from his college cap and gown into the oil business. He graduated from Princeton University in June, 1933 and a month later was working for Lindsay-McMillan Co., Milwaukee independent oil marketer.

Mr. Ott's leaning toward the oil industry may have been due to ancestral influence. His grandfather, the late Col. Roderic G. Collins, was with the Standard Oil Co. of Indiana for 32 years and was assistant general manager when he retired in 1919.

Mr. Ott went with the Pate Oil Co. as treasurer when it was organized in April, 1933 by William R. Pate of Milwaukee. Since then, he has been sales manager of this enterprising, independent marketing company.

Under Mr. Ott's leadership, the Wisconsin association is sponsoring a series of regional meetings to knit the organization more closely and increase membership of active oil jobbers.

NATIONAL PETROLEUM NEWS

VOLUME 32 WEDNESDAY, MAY 15, 1940 NUMBER 20

Several Rails 'Go It Alone' On Trainload

By Teletype

CHICAGO, May 14.—Several railroads operating out of the southwest are planning to go ahead with proposed reductions in trainload rates of petroleum products into the Middle-west, according to information received here today. The Southwestern Freight Bureau rejected trainload rate proposal at the hearing held in Chicago, May 8, because "it was consensus of majority of members of Western Trunk Line Committee that such rates would not be productive of increased revenue for railroads," according to W. T. L. Chairman Farmer.

Rock Island Railroad, long active in efforts to obtain trainload rates from the Mid-Continent is planning to go ahead with its own proposals for trainload rates 15c per cwt. (1c per gal. on "gas") below present carload rates. A. Mackenzie, Freight Traffic Manager of the Rock Island, told NPN here today that, "we intend to go through with what we started, but it may take some time."

Other railroads, including the Missouri-Pacific, have indicated that they would also continue working for trainload rates. One major shipper out of the southwest said that he was advised that a certain number of railroads have completed their plans for taking the trainload rates effective at the same time as the so-called truck company compelled rates from pipeline terminals. The terminal rates are scheduled to become effective June 1, but Petroleum Rail Shippers Assn. has petitioned ICC to postpone effective date so that they become effective simultaneously with the proposed trainload rates. The Petroleum Rail Shippers also asked ICC to postpone, for time being, scheduled action on ICC Examiner Stiles' recommendation, including trainload rates less drastic than Rock Island Trainload Proposal.

Auto Output Up 26%

DETROIT, MICH., May 13.—Production of passenger cars and trucks in April totaled 447,400 units, up 26% over April, 1939, Automobile Manufacturers estimated today.

'Another Madison' Case in East, Including Divorcement, Planned

By Teletype
N. P. N. News Bureau

WASHINGTON, May 14.—Department of Justice will file suit against major oil companies within next month or 6 weeks combining an East Coast duplicate of the Madison oil case with marketing divorcement in one overall national case, it was stated authoritatively here today.

Possibility of additional suits against oil companies also was admitted in these quarters on strength of U. S. Supreme Court's ruling in Madison case which held that any "combination" that affected prices was illegal. But there is nothing definite in sight.

Inquiry as to status of suit involving oil cracking patents developed that it will be some time in future before this litigation is started, since matter is still in process of investigation. Case was described as a slow, tortuous process involving interpretation of several hundred patents and requiring considerable time.

Pipeline Divorce Included

Suit to divorce pipelines from other operations of oil companies also will be filed, separately, within next month or six weeks, this source declared.

Decision to merge East Coast and marketing divorcement suit was not motivated by final ruling on Madison Case, it was said.

Progress of Pacific Coast oil indictment now pending in Los Angeles federal court is held up pending ruling upon defendants' motion for bill of particulars following earlier overruling of their demurrer against indictment. Arguments were heard on motion for particulars about two months ago and decision is expected any time.

No Oil Trade Groups Included

Authoritative spokesmen asserted in this connection that anti-trust suits pending against trade associations do not involve any oil industry organizations.

First hint that justice department had a "petroleum marketing divorcement" in the making was in testimony before appropriations committee by Anti-Trust Chief Arnold (See NPN, Feb. 7, 1940). He listed marketing divorcement and "oil cracking patents" as subject matter of "major cases" which could not be dropped.

Assistant Attorney General Arnold said:

"For the present, we are concentrating all our resources upon a few major accomplishments and are not dissipating our energies in shallow pretenses of action when no real

Madison Decision Arouses Comment

Competing with the war news from Europe, U. S. Supreme Court's decision in the Madison case nevertheless has been given much space in newspaper editorial columns. Nearly every commentator sees far-reaching consequences to business.

As a follow-up to its exclusive publication of the 30,000-word text of the supreme court decision last week, NPN samples editorial opinion on Madison case. See Pages 17-20.

Safety Rules Applied To Private Truckers

N. P. N. News Bureau

WASHINGTON, May 13—Interstate Commerce Commission has ordered privately-owned trucks, operating in interstate commerce, must conform to standards of operating safety for both drivers and equipment prescribed earlier to cover for-hire motor carriers.

Decision was announced May 8 in a ruling by Motor Carrier Division of ICC including Commissioners Eastman, Rogers, Lee and Alldredge, with the latter dissenting. Decision rejected claims of unconstitutionality of the proceedings.

Although order is to become effective Aug. 1, 1940, the prospect arose immediately of appeals to full commission and to the courts, including U. S. Supreme Court ultimately, which would mean it will be some time later than August when decision becomes operative—if it survives a court test.

Wage-Hour Law Restricted

Contemporaneous with ICC finding that it had authority to promulgate and apply such regulations—rather than merely report a need for them to the Congress, the U. S. Wage and Hour Division, Department of Labor announced that by virtue of ICC's finding of need for these safety of operation requirements the exemption from the 42 hour week and 1½ pay for overtime in Section 13 (b) (1) of the Fair Labor Standards Act, will apply to employes of private carriers.

Another important implication of the decision is that ICC laid groundwork for early application of its safety regulations governing transportation of explosive articles, including inflammable liquids such as gasoline, natural gas gasoline, etc., to privately-owned trucks.

Leon F. Banigan, managing director, National Council of Private Motor Truck Owners, Inc., announced here shortly after decision was released that his organization, representing ownership of about one and one-half million private trucks in agriculture and industry, will hold a board meeting soon to discuss reaction to the report. An appeal to the full ICC for review of the order may be requested by this group.

May Encounter Opposition

The order, which came in an ICC self-instituted inquiry, may encounter other opposition as

(*Continued on Page* 13)

accomplishment is possible." Continuing, he added: "In conclusion, let me summarize briefly the major cases which cannot be dropped and which will carry over into the next fiscal year. The general Newsprint case, the Oil Cracking case, the Pacific Coast Oil, the East Coast Oil, the Petroleum Marketing Divorcement suit, and the Trade Association case.

Current appropriation bill for Department of Justice as it passed the Senate included amendment increasing funds for enforcement of anti-trust laws from $1,250,000 to $1,400,000. Same section did include language forbidding use of any moneys provided for establishment and maintenance of permanent regional offices of the Anti-Trust Division.

Texas Anti-Trust Law OK, Says Frankfurter Decision

N. P. N. News Bureau

WASHINGTON, May 13. — Constitutionality of Texas anti-trust law in a price-fixing conspiracy was upheld by U. S. Supreme Court in a decision Monday, May 6 containing Justice Frankfurter's initial separate expressions on anti-trust matters.

Ruling upheld Texas Court of Criminal Appeals in declaring validity of entire statute which had been challenged by Herbert Tigner who was convicted under criminal application of the statute of conspiracy to fix retail price of beer.

Defendant claimed application of law under criminal procedure was unconstitutional under equal protection provision of 14th Amendment because application of the law to stockmen and farmers calls for civil prosecution.

"We find no constitutional bar against excluding farmers and stockmen from the criminal statute against combination and monopoly, and so holding, we conclude that there was likewise no bar against making the exemption partial rather than complete," Justice Frankfurter held. Justice McReynolds dissented.

Discussing the case Justice Frankfurter also stated:

"Legislation concerning economic combinations presents peculiar difficulties in the fashioning of remedies. The sensitiveness of the economic mechanism, the risks of introducing new evils in trying to stamp out old, familiar ones, the difficulties of proof within the conventional modes of procedure, the effect of shifting tides of public opinion—these and many other subtle factors must influence legislative choice. Moreover, the whole problem of deterrence is related to still wider considerations affecting the temper of the community in which law operates. The traditions of a society, the habits of obedience to law, the effectiveness of the law-enforcing agencies, are all peculiarly matters of time and place. They are thus matters within legislative competence. To say that the legislature of Texas must give to farmers complete immunity or none at all, is to say that judgment on these vexing issues precludes the view that, while the dangers from combinations of farmers and stockmen are so tenuous that civil remedies suffice to secure deterrence, they are substantial enough not to warrant entire disregard. We hold otherwise. Here, again, we must be mindful not of abstract equivalents of conduct, but of conduct in the context of actuality. Differences that permit substantive differentiations also permit differentiations of remedy."

EXCLUSIVE! MADISON CASE DECISION!

The COMPLETE text of the Supreme Court ruling—more than 30,000 words—published in NPN issue of May 8th. This decision may affect the entire oil industry . . . and YOUR business! Get your copy of the May 8th issue with a subscription to NPN—only $3 per year (Canada $4, Foreign $4.50)—and follow the effect of the decision during the next year.

Pin your check or money order to this notice and send to NATIONAL PETROLEUM NEWS, 1213 West Third St., Cleveland.

North Carolina Price Fight May Bring Government Probe

By Teletype
N. P. N. News Bureau

WASHINGTON, May 14.—"Favorable reaction" from the Department of Justice and Federal Trade Commission has been received by North Carolina oil jobbers who complained against what they termed "discriminatory" price cutting, according to John H. Parker, of Coastal Oil Co., president of North Carolina Independent Oil Jobbers Assn., reached at New Bern, N. C., via long-distance telephone from here.

Earlier, the association had dispatched a telegram to both the justice department and the FTC complaining against reductions in tankwagon prices on branded regular gasoline of as much as 2.7c per gal., and that branded jobbers were not protected by their suppliers while contract prices of branded jobbers were unchanged.

'Favorable Action' Seen

Although Mr. Parker was unable to follow up on the complaint at the justice department, while he was in Washington, May 10, testifying against Patman Chain Store Tax Bill, he told NPN today that he had learned from sources in touch with the department that the complaint "would receive favorable action." He said the impression was that the department would send an investigator into North Carolina to investigate the charges.

Federal Trade Commission expressed interest also, and asked for additional information, said Mr. Parker. Because price reductions were not the same in all areas affected, Mr. Parker said that FTC had been asked to look into the matter for possible violation of Robinson-Patman Law against price discrimination.

Extent of Price Cuts

North Carolina tankwagon reductions were initiated by The Texas Co., April 26, and were followed by other major companies, Mr. Parker said. Price cut was apparently to meet unbranded competition which had gained quite a foothold under North Carolina gasoline grading law which permits use of a "regular" sticker on gasoline of 60-octane minimum, whereas major-company housebrands run 4 to 6 numbers higher generally. But branded jobbers, unprotected by their suppliers, were "left in the hole," according to the association president.

"If the situation doesn't clear up soon, we all will be broke, as jobbers in the areas affected by the price cut are having to sell at less than cost," Mr. Parker said.

Samples of deepest tankwagon cuts on housebrand regular (undivided dealer): Durham 2.7c to 8c; High Point and Salisbury, 2.45c to 8.5c; Raleigh, 2.45c to 9c; and Charlotte, 19.

Footnote in Madison Opinion Viewed as Hint for New NRA

NEW YORK, May 13.—Government-regulatory legislation as a substitute for the now-defunct "rule of reason" was suggested by U. S. Supreme Court majority in a footnote to its decision in Madison oil case.

This footnote was taken in some quarters as almost a hint that the supreme court majority would look favorably at a re-enactment of NRA legislation authorizing administrative agencies to suspend the anti-trust laws for approved codes or agreements.

Writing along this line in the *New York Times*, Sunday, May 12, Gilbert H. Montague, New York attorney, who is an authority on anti-trust laws and trade association activities, said:

In a footnote whose significance has thus far escaped public comment, the majority of the court illustrate from recent legislation a "typical method" which might serve as a substitute for the "rule of reason," under which "the ban of the Sherman Act" has been lifted only after "scrutiny and approval of designated public representatives."

Under NRA, the majority explain, "this could be done through the code machinery with the approval of the President." They then mention consolidation of carriers after approval by the Interstate Commerce Commission under the Transportation Act, and the formation of associations of brokers and dealers subject to approval and supervision by the Securities and Exchange Commission under the Maloney act, and the

fixing of minimum and maximum prices by the Bituminous Coal Commission.

In place of the judicial flexibility of the now curtailed "rule of reason," the majority of the court in this May 6 oil decision significantly point to this "typical method" by which Congress may create administrative agencies for lifting "the ban of the Sherman act" subject to the "scrutiny and approval of designated public representatives."

This is a hint from high authority, and it will be interesting to see how Congress and business men take it.

Oil Tidelands Bill Reported In Senate

WASHINGTON, May 14.—Senate Public Lands Committee today revised and ordered reported Nye resolution (SJ 92) "requesting" U. S. attorney general to "determine" title to "all tidal and submerged lands" in the country, including tidal oil lands offshore in California, Texas, Louisiana, and possible other states.

Resolution as reported emasculates original text which "directed" attorney general to "assert, ascertain, establish, and maintain the right and interest of U. S. in and to" offshore oillands as a naval reserve.

Etex Oil Case Appealed

N. P. N. News Bureau

WASHINGTON, May 13.—Possibility of U. S. Supreme Court passing upon constitutionality of Texas oil proration orders for entire East Texas field is seen in appeal now pending in highest court.

Court has stayed enforcement of injunction obtained by Humble Oil & Refining Co. against the Texas Railroad Commission's order limiting and prorating production of oil in East Texas field.

Allies Protect Refineries In Aruba and Curacao

WASHINGTON, May 13.—Allied armed forces have landed in Dutch West Indies to protect oil refineries in Aruba and Curacao from sabotage but State Department here doesn't regard this as involving this country's Monroe Doctrine.

President Roosevelt last week told newspapermen that even though Holland had been declared a belligerent under U. S. Neutrality Act there was no present intention of extending the combat zone (from which American-flag vessels are barred) to include Dutch West Indies.

Tulsa Oil Show To Open May 18 With Big Crowd

TULSA, May 14. — The 1940 International Petroleum Exposition will open its doors here May 18 for what promises to be the largest of the oil industry's greatest shows.

Prediction that this year's exposition will surpass any previous one is based on the fact that advance ticket sales are 52% ahead of sales for 1938 show; every available exhibit space has been taken; and the housing committee of the Chamber of Commerce is having to work night and day to handle advance registrations.

The usual last-minute rush is on at the exposition grounds, with hundreds of men working night and day to get the exhibits set up in time for official inspection at 11 a. m., May 18.

The Exposition will be opened officially at 2:30 p. m. Guest speakers will be W. M. Jeffers, president of the Union Pacific Railway Co., Omaha, Neb., and B. C. Heacock, president of Caterpillar Tractor Co., Peoria, Ill.

One of the outstanding features of this year's exposition will be the safety awards to 12 oil men. Awards will be made at a banquet May 23.

The banquet will conclude an all-day safety conference. At the noon luncheon that day, Felix Doran Jr., general manager, fleet sales division, General Motors Corp., will talk on "Safer Cars! Safer Drivers."

Socony-Vacuum Cuts Fuel Oil

NEW YORK, May 13.—Socony-Vacuum Oil Co., Inc., has reduced its light fuel oil prices 0.2c a gal., all methods of delivery, throughout the Metropolitan New York area, and in the Albany division, effective today, according to a company announcement. At the same time, the announcement stated, light fuel oil prices throughout the New England area were revised, resulting in average reduction of 0.1c a gal.

Auto Expense Averages $197.74

WASHINGTON — The typical American family spends $197.74 annually to operate its car for business and pleasure, survey by U. S. Bureau of Labor Statistics of 6,366 car-owning families shows. The figure includes car-purchase, taxes and expenses for gasoline, oil and repairs.

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Rhode Island's New Sign Law Prohibits 'Bushel' Quotations

N. P. N. News Bureau

NEW YORK, May 6.—Governor Vanderbilt of Rhode Island last week approved a bill to regulate the advertising and sale of gasoline at retail, and another measure which brings gasoline pumps under the Rhode Island Fair Trade Act authorizing suppliers to set minimum prices on brand products. Both bills were introduced by Rep. Windsor in legislative session which adjourned April 24.

The bill regulating retail gasoline sales, as approved, limits motor fuel signs to 8 by 10 inches, with the tax shown separately from gasoline price. It also requires that such signs be displayed only on the pump, and prohibits dealers from posting a fixed price for a quantity of gasoline which is less than the aggregate of the per-gallon price, or from giving rebates or allowances in any form — coupons, prizes, punch boards, wheels of fortune, etc.

Constitutional amendment to prohibit diversion of gasoline taxes and automobile registration fees from highway funds failed for the fourth consecutive year.

Worn Tire Bill Dies

Other "oily" bills which failed of enactment included a proposal to reduce the state gasoline tax from 3c to 1c per gal. and a measure requiring inspection of trucks delivering kerosine.

A bill to prohibit operation of motor vehicles equipped with tires showing breaker strip, cushion gum, or fabric, with fine or jail penalties for violators, failed to pass.

Washington Dealers Seek To Wean Public from Cut Prices

WASHINGTON, May 14.—To discourage the public from patronizing service stations selling under posted prices, organized gasoline retailers of Washington will meet May 20 to formulate a constructive program, L. S. Scott, president, Loughborough Oil Co., stated today.

Widespread prevalence of discounts, said to be a problem in this area, shows gasoline selling from 2c to 3c below posted prices. Continuance of this situation for some months now, has finally reached the point where business existence of independents is threatened, according to Mr. Scott.

Prospective public campaign will urge upon public necessity of maintaining dealers margin of profits to keep local gasoline market from "going sour" to detriment of business here in general, Mr. Scott declared.

Wage-Hour Slates Hearing for June 3 On Exemptions for 'Executives' In Oil

N. P. N. News Bureau

WASHINGTON, May 13.—U. S. Wage-Hour Division announces hearing June 3 on proposals to redefine "executive" as term is used to describe exempt employe in the "manufacturing and extractive industries," including petroleum production and will also re-examine terms "administrative,". "professional" and "outside salesman" as applied to these industries. Division also announced it will hold hearings "soon" to re-examine definitions of these terms in transportation industry, presumably including pipelines.

Wage-Hour Administrator Fleming announced in this connection that "no changes are planned in the present definitions" in the industries mentioned "until this series of hearings has been completed."

He added this is in accord with recommendations made by many representatives of industry and all labor representatives who appeared at hearings on the wholesale distributive phase of the problem here April 10-16.

"Any necessary redefinitions will be made without further delay" at the conclusion of these hearings, he added. Oil industry representatives attended the hearings on the wholesale distributive trade phase and suggested some modifications (NPN, April 17, P. 22) although in the main withheld concrete proposals on theory broad changes requested generally by others would remedy any objectionable feature as specifically applied to oil distributors.

Eastern Suppliers Hold Off Setting of Fuel Oil 'Tops'

NEW YORK, May 6.—With exception of Socony-Vacuum, who set its fuel oil contract "tops" for 1940-41 on April 15, other large eastern suppliers are still holding.

European war developments have made the tanker markets unpredictable, and suppliers generally indicated they were "giving the matter much more consideration than in previous years."

Socony's "tops" were set as much as 1.25c above 1939-40 contracts. New York City, for example, No. 2 fuel "tops" are at 7.7c and 5.8c for consumer and distributor contracts, respectively, as against 6.75c and 4.75c the past winter.

I.P.A.A. Hits 'Backdoor' Move

N. P. N. News Bureau

WASHINGTON, May 13.—Independent Petroleum Assn. of America has filed a memorandum with Federal Power Commission opposing any extension of federal control over petroleum production incidental to federal regulation of distribution and sale of natural gas. Precautionary move was made in pending proceedings involving Columbia Fuel Corp. (NPN, March 20, P. 11).

Tire Companies To Meet Prices Of Chain Stores

AKRON, O., May 10.—Low-priced tires, designed to meet needs of car owners with automobiles 8 or more years old, are now available at a list price of about 16½% below previous cheapest casings sold by major rubber companies, it was understood here today.

Event which marks rubber companies' entrance into this low-price field, was said to be desire to meet competition from chain stores and mail order houses. It is believed that rubber companies will market these low-priced tires, restricted to the three popular sizes, as "sales leaders."

The three popular sizes are: 6.00-16; 4.75-5.00-19; and 5.25-5.50-17.

While this innovation will have the effect of narrowing dealers' profit margins, it is hoped that dealers will be encouraged to sell higher-priced merchandise.

The four major rubber companies now marketing lower-priced tires are said to be B. F. Goodrich Co., Goodyear Tire & Rubber Co., Firestone Tire & Rubber Co., and U. S. Rubber Co.

Government's Entry Into Oil Business MayComeinCanada

OTTAWA, May 11.—Two new laws enacted this week by the special session of British Columbia provincial legislature, provide wide government powers in taking over control of oil industry here.

In form of an amendment to the Coal and Petroleum Products Control Board Act, government is given right to seize property owned by any petroleum company, if the company refuses or fails to supply an adequate quantity of petroleum products at a price fixed by the board.

The other law, known as Petroleum Sales Act, gives government the right to engage in petroleum industry by acquiring any property necessary for the purpose.

The latter act empowers the government to organize a company for carrying on the oil business with provincial funds and to sell securities repayable not later than 50 years hence at a maximum interest rate of 5%. The bill providing for the seizure of private property of persons violating price fixing orders, permits the Board to make such seizures as often as such violations occur.

R. L. Maitland, Conservative Leader in the Legislature, characterized this legislation as calling for the "socialization of business in the country" and showing "contempt for the rights of the individual."

Price Cutting 'Foolish' New York Dealers Told

NEW YORK, May 13—An educational drive to show gasoline dealers in Brooklyn "how unprofitable it is to give their merchandise away" is being sponsored by the Gasoline Merchants of Brooklyn and Queens, according to letters sent to the dealers by the association.

Price cutting is a "ridiculous" method of merchandising, the letter states, and points out that competitive dealers are ready at all times to follow with a still lower price.

Clean, attractive stations and good service will eliminate the necessity of price-cutting, and will enable dealers to maintain their business on a profitable basis, the letter concludes.

Oil Transportation News

Latest developments in freight rates, legislation, regulations, and new construction affecting transportation of petroleum products by truck, barge, tanker, pipeline, and railroad.

Safety Rules Applied To Private Truckers

(*Continued from page 9*)

well. Opponents claim there is little public demand for coverage of private trucks, as they state of 120 witnesses who testified in the case, over 100 were opposed. Much is expected to be made of the Alldredge dissent and reasons underlying it in the prospective appeals, although it is realized the courts are loath to disturb an administrative finding short of exceptional circumstances, such as an arbitrary ruling, decision based upon an incomplete or obsolete record, etc.

Commissioner Alldredge said in part: "It seems to me that there is no constructive purpose to be accomplished by displacing the jurisdiction of other agencies over this subject-matter, which will be a necessary legal effect of our entering the field, unless we are in position to improve the situation. I do not believe we are in such a position at the present time.

"It seems to me," he added, "that it would be better and more in conformity with objectives which Congress had in mind when it passed the Motor Carrier Act, 1935, to concentrate our efforts toward the promotion of safety on the highways in connection with the operations of motor carriers for-hire which have been unconditionally placed under our regulation. When we have made more progress in that field, then I think we might give attention to private carriers."

Regulations Cited

Regulations prescribed are identical with those established for common and contract carriers by motor truck except as to farm trucks and driver-salesmen. In general, the order requires drivers be 21 years old and physically fit; that maximum work week is 60 hours (not 42 hours as in wages and hours act) with limit of 10 hours actual driving time per day.

ICC decision avoids requirement of time-and-half-time pay for overtime beyond present 42-hour work week limit of wages-hours law. In this connection, Wage and Hour Division pointed out that in May 1939, it had ruled employes of private motor carriers were not within the exemption from 42-hour week and 1½ overtime pay exemption "unless and until" ICC made finding of need for the now-prescribed requirements.

Division also pointed out Friday May 10, that ICC order will have no retroactive application and Division will not take enforcement action respecting past violations of 42-hour work week overtime provisions, nor undertake collection of restitution for such employes. Questions as to retroactive effect will be left to ICC and restitution matter for determination in employe suits under Section 16B of Fair Labor Standards Act.

Other highlights of the order applying to private truck operations, the bulk of the safety regulations with respect to equipment and hours, and qualifications of drivers, heretofore applied only to for-hire carriers, include:

Driver Reports Possible

Reports. Private truck owners and their drivers are not required "at the present time" to file reports with the Commission as to hours worked in excess of those prescribed as maximum hours on duty. Commission will ask Congress to increase its appropriations before it will require carrier and driver reports.

(Duty to require weekly and daily maximum hours in order to assure safety of operation was cited as incumbent upon commission under the provision Sec. 204 (a) (3) of the Motor Carriers Act under which it was acting.)

Driver-Salesmen who devote more than 50% of their time to selling and less than 50% of their time to driving, loading, unloading, etc., are exempt from the 60-hour rule, but no such driver shall be permitted to drive for more than 50 hours in any week. All other drivers, except farmers in the transportation of their agricultural commodities and products, are permitted a maximum work-week of 60 hours. Farm trucks are exempt.

Farm Regulations Told

The "Ten-Minute Rule." Drivers of private trucks are permitted to regard all stops made within a community as one stop in computing their driving time.

Twenty-one-years-old, etc. Drivers of farm vehicles are exempted from regulation as to hours of service. Farm truck drivers between the ages of 18-21 are permitted to drive farm vehicles not exceeding 10,000 gross weight; are not required to pass a physical examination, and are permitted to transport passengers.

Driver's Log. A "Driver's Log" will not be applied to the operation of farm trucks or work-trucks or cars of public utilities.

Although decision puts hours of private truck operations under ICC rather than Wage and Hour Division, it is understood Division will retain jurisdiction of minimum wage aspect.

Commission estimated there are 3,000,000 vehicles operated by private carriers of which 600,000 are engaged in interstate commerce.

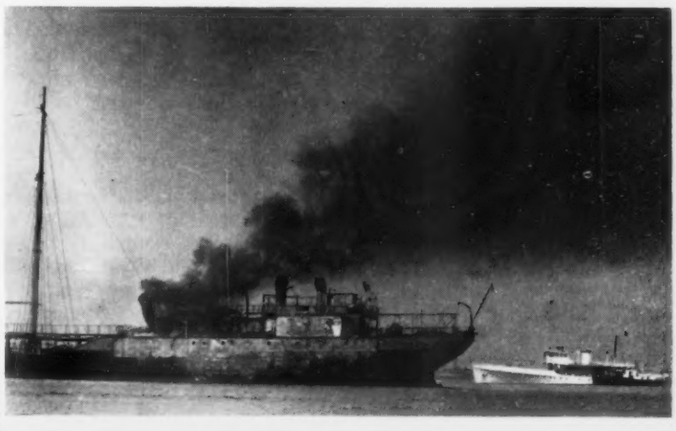
Fire Beaches Tanker At Charleston

CHARLESTON, S. C., May 11.—After being blistered by a fire which raged in her engine room for 23 hours, the Norwegian tanker, Willy, unloaded its 7500 tons of gasoline at a Texas Oil Co. terminal and sailed for New York in tow of the tug Peacock.

Last week, the Willy was aground in the Cooper river, awaiting transfer to a local oil terminal of her cargo of aviation gasoline destined for English war planes. Unofficial estimate of damage is $200,000.

Miraculously, the gasoline did not explode, though for a time it was feared the burning ship, with 8000 tons of gasoline in her hold, was a menace to the Cooper river bridge, near where she was moored, and the Charleston docks across the river. The ship had come into Charleston in distress because of a leak in her hull, discovered at sea on a voyage from Corpus Christi, Texas, to Halifax to meet a convoy. She was anchored well out of the main ship channel because of the nature of her cargo.

Arriving April 28, the Willy kept up steam to operate pumps to keep the ship afloat, as water was entering a 4-foot hole about as fast as it could be pumped out. At 10:30 p.m. Sunday, April 29, fire was discovered in the engine room. The crew abandoned ship in two lifeboats. Navy, Coast Guard and city fire department officers and men battled the blaze. It was subdued about 9:30 p.m. the following day.



Rail Export Rate to East Asked on Natural Gasoline

By Teletype

TULSA, May 12.—An export freight rate of 44c per hundredweight (2.904c per gal.) on natural gasoline shipped from Group 3 (Oklahoma) origins to Marcus Hook, Pa., has been proposed and is to be considered by Southwestern Freight Bureau.

Proposed rail rate for export only is 35c a cwt. or 2.310c a gal. below current domestic rates from Oklahoma to Marcus Hook. Shipments from natural gasoline plants in Arkansas, Louisiana, Missouri, New Mexico and Texas would also be affected, retaining the same origin differential relationships over Group 3 as now exists on domestic rates.

Regulations governing petroleum purchases by the British and French buying pools have switched the assembly point for exportations from Gulf Coast ports to North Atlantic seaports. Export rates to Marcus Hook from southwestern producing points is said to be an effort on part of natural manufacturers to retain their place in the supply picture by meeting Allied requirements as to assembly point for cargoes.

Southwestern lube manufacturers presented a similar proposal to rails. The export lube rate from the southwest to Carteret, N. J., was approved by Southwestern Freight Bureau and Western Trunk Line but is said to have met some resistance while being considered by other freight bureaus. Final action has not yet been taken by several bureaus.

Rail Shippers Ask ICC Defer Ruling

TULSA, May 14.—Petroleum Rail Shippers Assn. early this week petitioned Interstate Commerce Commission for:

(1) 90-day postponement of ICC action scheduled on Examiner Stiles' recommendation for a 25-car minimum trainload rate on petroleum shipped from southwestern refineries to midwestern and northern terminal points, and

2) 30-day postponement of the reduced rail rate scale on petroleum shipped from northern marine and pipeline terminals inland to Nebraska, Iowa, Minnesota, North and South Dakota destinations scheduled for June 1.

Postponement of action on the examiner's trainload rate recommendation was requested in order that the true effects and results of a rail-initiated trainload proposal could be ascertained. It was pointed out in the petition that while rail committees last week rejected this rail-initiated proposal, Rock Island, Missouri-Pacific and other interested carriers were expected to go ahead with rates on 25-car minimum deliveries that are 15c a cwt. (1c a gallon on gasoline) below present carload rates.

Reduced rates from northern and mid-western terminals to Nebraska, Iowa, Minnesota, North and South Carolina destinations under present rate conditions "further aggravates inequalities" complained of by P.R.S.A., petition said. With this in mind, ICC is petitioned to hold up rates from the terminals so the rail-initiated trainload rates can be made effective the same day.

U.S. Tankers Move to Spain

By Teletype

NEW YORK, May 14.—Two more American-flag tankers, one "clean" and one "dirty", left the Coastwise run for trips from the U. S. Gulf to the south of Spain last week. Rate on both boats was $21 a ton. Two others were reported fixed for off-shore movement, one from the Gulf to Porto Rico, carrying a mixed cargo of gasoline and gas oil at 54c and 60c, respectively, and the other from Curacao to Havana, Cuba with a cargo of fuel at 45c.

Little activity was reported in coastwise movement, where rates for dirty tonnage held at all-time high with the fixture of a 100,000 bbl. cargo of 30 gravity or lighter crude at 60c. No fixtures for "clean" tonnage for movement from the Gulf to North Atlantic ports were reported. Last paid for gasoline remained at 54c with one owner said to be asking 60c, for lifting May 28.

Great Britain's lifting its ban on Norwegian-flag tankers touching at the Dutch West Indies (Aruba and Curacao), will not greatly affect the tanker picture as a whole, boat men here said, and pointed out that the ban had not been in effect long enough to cause any tangible difference, one way or the other.

Heads New Pipeline

Prominently identified with business and financial circles in the South for many years, Ryburn G. Clay was recently elected president of Southeastern Pipe Line Co., now engaged in constructing a gasoline pipeline from Port St. Joe, on the Florida gulf coast through Georgia to Atlanta, then to the Tennessee line near Chattanooga

Sinclair to Build 10 Tankers

NEW YORK, May 13. — Sinclair Refining Co. contracted for construction of 10 high-speed tankers, aggregating more than 130,000 deadweight tons and costing about $25,000,000 for coastwise requirements and transporting Venezuelan, Mexican and other foreign oil. Bulk deliveries of the Sinclair fleet are about 42,000,000 bbls. a year.

Georgia Transporters Lose Rate-Cut Fight

By Teletype

ATLANTA, Ga., May 14.—Two suits brought by Georgia truckers seeking to invalidate reduced intrastate rail rates on petroleum were dismissed in the Courts last week. Rails had maintained reduced rates were made to meet competition from a gasoline line now being built from the Florida Gulf Coast into the Southeast to serve Georgia and surrounding states.

Petroleum Carrier Corp. and Blue's Truck Line Co., who asked for injunctive relief from the reduced rates, charged new rail scale was "truck-destructive."

The two suits, one brought in Federal District Court at Macon and the other in Superior Court here, were dismissed.

And once again oft-sued Southeastern rails "got the high-ball sign to go ahead" with the reduced rates that took effect April 29.

Tanker Probe May 15

WASHINGTON, May 14.—Tanker probe hearing before Hart sub-committee of House Merchant Marine Committee scheduled for today was postponed to May 15 on account of early meeting of House this morning to consider transportation bill.

Witnesses scheduled to appear have been augmented by addition of a representative of Cities Service Co. Originally scheduled, were spokesmen for Pennsylvania Shipping Co. and the C. D. Mallory Co.

New Tanker Launched

PHILADELPHIA—S. S. Robert C. Tuttle, Atlantic Refining Co.'s new 19,405-ton tanker, was launched May 11 at the yards of Sun Shipbuilding and Dry Dock Co. Mrs. Tuttle, wife of the vice president for whom the vessel was named, christened the ship. A turbo-electric tanker, the S. S. Tuttle will start its service this July between Philadelphia and Texas Gulf ports.

ICC Calendar

HEARINGS

L. J. O'Laughlin, Salamanca, N. Y. (MC 86749, Sub. 1) May 28, Buffalo, on application to extend operations as a contract carrier of petroleum products in N. Y. and Pa. over irregular routes.

Chris Hein, Forsyth, Mont. (MC 101167) June 5, Billings, on contract carrier application to transport petroleum products in Mont. and Wyo. over irregular routes.

Partington's Garage and Truck Line, Billings, Mont. (MC 1881, Sub. 4) June 5, Billings, on application to extend operations as a contract carrier of petroleum products in Wyo. and Mont. over irregular routes.

Henry Spence, Billings, Mont. (MC 88412, Sub. 1) June 6, Billings, on application to extend operations as a contract carrier of petroleum products in Mont. and Wyo. over irregular routes.

Petroleum Transit Corp., Fargo, N. Dak. (MC 101461) June 6, Fargo, on common carrier application to transport petroleum products in Kansas., Mo., Nebr., Iowa, Minn., Wisc., and N. Dak. over irregular routes.

Rail Rate Reductions Seen in Panhandle Area

DALLAS, Tex., May 13. — Faced with additional losses of petroleum tonnage in the Texas Panhandle, Texas railroads are considering reductions in petroleum rail rates from Panhandle area refineries to Panhandle destinations of as much as 12.5 cents a cwt. (0.875 cents per gal. on gasoline).

By the middle of last year, rails had lost 50% of their petroleum tonnage to trucks in the Panhandle area, with 75% losses in the more competitive areas. Trucking has increased in the Panhandle since that investigation, it was said.

Patman Chain Tax Hit By Jobbers, Refiners

N. P. N. News Bureau

WASHINGTON, May 13.—Declaring petroleum outlets distinctly different from typical chain stores, 3 congressmen, 5 oil jobbers and 2 refiners opposed inclusion of gasoline filling stations under Patman chain store tax bill (HR 1) at hearings, Friday, May 10, before McCormack Subcommittee of House Ways and Means Committee.

Simultaneously with barrage of opposition from oil industry spokesmen against inclusion of filling stations, the U. S. Chamber of Commerce released a salvo, through its Committee on Distribution, declaring the bill "discriminatory and confiscatory."

Said the Chamber: "The real purpose of HR 1 is confiscation of a particular form of business enterprise and no convincing reasons for necessity of confiscation have been brought forward. The bill is clearly discriminatory legislation affecting an important and lawful field of retailing. It has no place on the statute books."

Exempt In 16 States

Hearings virtually wound-up with testimony of oil men, although 4 days rebuttal argument, both pro and con, will be heard commencing Monday, May 13.

Congressional members who testified against the bill are from oil producing states and included Reps. Wesley E. Disney, Okla., Thomas D. Winter, Kans. and Wade Kitchens, Ark. Mr. Kitchens said filling stations should be exempt because they are principally engaged in providing service to the motoring public, including much free service such as water, air and restrooms. He pointed out filling stations were exempt from chain store laws in 16 states having such laws. The Arkansas legislator emphasized such a tax would single out an industry for discriminatory treatment.

Rep. Winter, declaring Kansas' oil production is worth as much as its agricultural output, said "marketing of petroleum products would immediately be plunged into chaos." He stressed that marketing gasoline, oil, etc., was different than commodities, notably food, commonly subject to chain marketing. "Filling stations are locally operated, locally owned and operator can buy or lease stations they are running," the Kansan declared.

Disney Brief Submitted

Congressman Disney submitted a comprehensive brief, aside from his oral statement which included the amendment proffered by the oil industry organizations, to provide exemption for filling stations.

The amendment reads: "The term 'retail store' shall mean and include any store or mercantile establishment in which goods, wares or merchandise of any description are sold at retail but said term shall not be construed to mean or include any place of business at which the principal business conducted is that of selling, storing or distributing petroleum, any establishment or facility maintained . . . "

Effect of such amendment, if incorporated in the bill, would exempt not only filling stations but jobbers' bulk storage and distributing plants.

Rep. John D. Dingell, Mich. maintained his interest in the filling station angle. Although protesting his interest to be purely academic, the Michigan solon maintained it was a "logical conclusion that even if filling stations were excluded they will be included tomorrow." In his view, "if stores or distributors are organized in groups, under a common management, they constitute a chain."

Oil Men Who Testified

According to Rep. Disney, the exemption should be sufficiently broad "so that petroleum outlets may continue to handle such emergency equipment as lamp bulbs, anti-freeze solutions, windshield wiper blades, spark plugs, tires and tubes, and other similar items."

Oil men who testified included the following:

T. M. Martin, El Dorado, Ark., Lion Oil Refining Co.;
J. E. Smith, Superior, Wis., Northwestern Oil Co.;
E. T. Wollfolk, Memphis, Tenn., Mid-South Oil Co.;
H. A. Fuller, Parish, N. Y., Parish Oil Co.;
John H. Parker, New Bern, N. C., Coastal Oil Co., North Carolina Independent Oil Jobbers Assn.;
J. M. Houghland, Nashville, Tenn., Spur Distributing Co.;
John W. Wright, Charleston, W. Va., Elk Refining Co.

No legislation along this line is expected at the present session of Congress.

Subcommittee which conducted the hearings include Reps. John W. McCormack, Mass.; John W. Boehne, Jr., Ind.; Richard M. Duncan, Mo.; John D. Dingell, Mich. Frank Crowther, N. Y.; Harold Knutson, Minn.; and Roy O. Woodruff, Mich.

Ohio Tax Pennies Add Up

COLUMBUS, O., May 6.—Exactly $540,316,659.30 has passed through the hands of Mrs. Essie Ept from enactment of Ohio's gasoline tax in 1925 down to March 31. Mrs. Ept handles liquid fuel tax revenues.

'Gas' Tax Diversion Seen in 'New Dress'

NEW YORK, May 13—A new method of diverting gasoline tax funds was seen in the resolution introduced in South Carolina by Representative Poag. The resolution proposed to reduce the gasoline tax for "road purposes" from 6c to 5c per gal., but at the same time, levies an additional tax of 1c per gal., the revenue from which would be used for "general purposes".

N. P. N. News Bureau

WASHINGTON — Petroleum tonnage paid nearly one-twelfth of American railroads' carload freight revenue in 1939. Crude, asphalt and refined products brought $246,813,742 to the railroads the past year, 8% of the total carload freight revenue of $3,123,589,475.

Oil's 1939 Tax Bill of $1,335,000,000 Exceeds Value of Entire Crude Output

N. P. N. News Bureau

NEW YORK—Taxes on petroleum and its products in 1939 exceeded by $100,000,000 the total value of all crude oil produced in the U. S. last year, according to American Petroleum Industries Committee. This figure represents more than 10% of all taxes collected by the federal, state, and local governments combined.

Gasoline taxes, which exceeded the billion-dollar mark the past year, represented the largest share of the industry's $1,335,000,000 tax bill. State "gas" tax collections was estimated at $815,000,000, a new high, and the duplicating federal "gas" tax added another $215,000,000, also a record high.

"In virtually every state," according to A.P.I. Tax Economics Bulletin, "the annual receipts from this single source exceed the total of all state taxes collected in any year prior to the World War. The average state now depends upon the gasoline tax for nearly 30 per cent of its total tax revenue; in three states, the proportion is nearly one-half.

"If the total tax bill had been paid entirely in wages during 1939, employment might have been provided for 870,000 men at an average annual wage of $1500. It is well known that petroleum wages now greatly exceed those paid in other industries, but many companies have reported that their tax bill actually exceeded the amount of wages they were able to pay."

Industry's 1939 tax bill was estimated at nearly 4 times the dividends paid to the industry's 1,250,000 stockholders.

THE EDITOR'S PAGE

Readers Comments and Opinions will be much Appreciated by—WARREN C. PLATT, Editor and Publisher, Penton Building, Cleveland, O.

Madison Decision Raises Serious Question As to what Any Oil Men Can Talk About

The U. S. Supreme Court's broad decision sustaining the convictions in the Madison oil case and also the contention of the government that any combination that affects price is illegal, will probably be one of the most vexing decisions to business that court has ever rendered.

The problem placed before business men is not only what the courts and juries may decide are "combinations affecting price" but how this New Deal administration and subsequent administrations, may decide what joint business activities may be banned by this decision. Not only the Department of Justice under this and subsequent administrations will be guided by this decision but so will attorneys general of the states and even county prosecutors.

Prosecuting officers are generally quite inclined to stretch the language of court decisions and statutes as far as possible in bringing suits. That has been particularly true all through the New Deal. This Supreme Court's stretchable language has been given to an administration whose chief, on the night of his last election, boldly radioed that he would prove to business men that he would be "their master."

The problem before business men today, and before every oil man and particularly every oil association is:

(a)—Just what can we do under the new decision to improve our business methods and conditions that will not be held by this court as a violation of law? and

(b)—Just what can we do that will not be *CONSTRUED* as a violation of the law by an ambitious, or revengeful, and power-seizing law enforcing agency and which will bring suits against us that will at least be extremely costly to defend?

The questions are not idle ones in the light of the following language used by this New Deal Supreme Court, for illustration—

"Any combination which *TAMPERS* with price structures, is engaged in an unlawful activity. . . .

". . . stabilization is but one form of manipulation. And market manipulation in its various manifestations is implicitly an artificial stimulus applied to (or at times a brake on) market prices, a factor which prevents the determination of those prices by free competition alone. . . .

"Under the Sherman Act a combination formed for the purpose *AND WITH THE AFFECT* of raising, depressing, fixing, pegging, or *STABILIZING* the price of a commodity in interstate or foreign commerce is illegal *per se*.

"The fact that sales on the spot markets were still governed by *SOME* competition is of no consequence. For it is indisputable that that competition was restricted through the removal by respondents of a part of the supply,

"The elimination of so-called competitive evils is no legal justification for such buying programs.

"Even though the members of the price-fixing group were in no position to control the market, to the extent that they raised, lowered, or *STABILIZED* prices, they would be directly interfering with the free play of market forces.

"Congress has not left with us the determination of whether or not particular price-fixing schemes are wise or unwise, healthy or destructive. It has not permitted the age-old cry of ruinous competition and competitive evils to be a defense to price-fixing conspiracies. It has no more allowed *GENUINE* or fancied *COMPETITIVE ABUSES* as a legal justification for such schemes than it has the good intentions of the members of the combination."

We have capitalized certain words in the above to bring home to the reader the extreme breadth of the decision.

Just how far, for or against many business activities, can those words be interpreted?

What is a "combination" but two or more men getting together?

What is "tampering"?

What, that may be entirely legal today, may "affect price"?

What things may be done to "stabilize" business or eliminate "competitive abuses" but what MAY "affect price", if not now then eventually?

It may be argued that all this was said by the court as regards a certain case and a single set of facts. However, these words also apply to tomorrow and to every man who was NOT involved as a defendant in the Madison case. These words will be FIRST interpreted by the law enforcing officers of the country when they decide whether to bring suit and then next by the courts. These words and sentences will be taken separately, as I have done here, and scanned and interpreted in the light of a given proposed case which may be under consideration because of a most dastardly exercise of "monopolistic power" or perhaps only because the prosecutor, be he county, state or national, sees much political advantage from the attack on an entirely innocent group of business men.

Business men always have and always will talk price and competitive evils as they meet. Each will try and convince the other to "better ways" or to get a third to improve his business manners. There may even be understandings as to a certain price action, between two grocers, milk dealers, lawyers, doctors or even gasoline vendors. If there are only two or three business men in such conversations there can hardly be a "monopoly". But this Supreme Court decision says it doesn't make any difference how few there are nor how impotent they are to do anything about market conditions and price, "any combination" shall not "tamper with the price structure" or do anything that will even "affect" prices.

The popular idea among business men has been that if it was impossible for them because of their smallness to control a market through a "monopoly", that the courts would ignore them, in fact that the Sherman law did not apply to them. But this decision says that conception is wrong.

All this is of the greatest importance to every Independent marketer and every gasoline dealer in the oil industry to say nothing of the larger units. Even IF any law-enforcing agency were willing to permit the associations of the smaller marketing units to discuss whatever "competitive evils" they wish and to try and eliminate "unfair marketing practices" how about the alleged "co-operation" of the larger oil companies?

It should be a fair guess that it will be practically impossible to even drag a major company representative into any oil meeting from now on, but what may not the government call "evidence of participation"?

At Madison some dozen men were indicted, put to the expense of time and money defending, and their names were only mentioned in that courtroom at roll call when they entered their pleas of "not guilty", again when they appeared for trial, again when a witness testified that they held such-and-such an office with a company, when Chief Defense Counsel Donovan in his closing argument, called on all defendants to stand and last when these men were acquitted. But for four months they sat in that courtroom and were parties to a defense that necessarily cost a few millions of dollars.

Then there were defendants who had been called on by some one allegedly representing a "conspirator" or who had been told of the "buying program"—which they also read about, as did everyone else in the oil trade papers, so it was said they had "guilty knowledge".

Madison was a criminal case and it's

(*Continued on page* 22)

NRA Keynotes Comment on Oil Case

Newspapers View Madison Decision As 'About-Face' in New Deal Policy

CLEVELAND, May 13.—"It is a far cry from NRA to the decision of the U. S. Supreme Court in the oil cases," according to an editorial in the *Minneapolis Tribune*, pointing out that gasoline buying programs, for which the companies were indicted, were aimed at eliminating price wars. "The decision looks toward unrestricted competition. . . . In the NRA days they called it 'cut-throat competition,'" the editorial stated.

That was the theme of much editorial comment on the Madison decision which held that any agreement among competitors to stabilize prices at a definite level was in itself a violation of the Sherman Anti-Trust Law, regardless of the "reasonableness" of such prices or the motives of defendants.

"Law But Not Justice" was the way *Dallas News* headlined its Madison case editorial, pointing out that buying programs had maintained crude prices.

In a similar vein, the *Baltimore Sun* said there was "a certain irony in the circumstances that the Department of Justice is prosecuting oil companies and their officers in this case, for price-fixing practices very similar to those which the government sought to encourage and bless under the now unlamented NRA."

Nearly every editorial writer viewed the decision as a definite rejection of the 30-year-old "rule of reason" in anti-trust cases.

New York Times Comments

The decision, according to *New York Times*, "obviously leaves our whole anti-trust attitude and policy in a chaotic state.

"The evidence seems clear, not only in the whole record of the government-approved NRA codes but in correspondence and reports of the Secretary of Interior, for example, that price 'stabilization' operations of the oil companies were undertaken with the knowledge, approval and encouragement of federal officials," the New York paper added.

Decision Praised

But the court's decision and government policy in the Madison case were not without their staunch defenders. For example, *Bridgeport Telegram* said:

"Apparently, we are entering an era in which fixed prices are held to be unreasonable *per se* and in which competition will rule the roost. We hope that this is so for it is the American way and price-fixing never was popular. Not even when Uncle Sam fixed the prices."

A vigorous defense of the government's "inconsistencies" in prosecuting the Madison oil case was made May 10 by *Springfield (Mass.) Republican*.

Decision poses the question of whether the people want "the productive efficiency of centralized economy or the rugged individualism promoted by the dispersed economy," according to *Hartford Courant*.

In South Carolina, the *Greenville News* said the opinion was a "fresh" interpretation bringing within scope of the Sherman Act "many co-operative actions among business enterprises widely regarded as desirable." It also called attention to the government's own program through co-operative farmer action to increase or stabilize farm prices.

Return to 19th Century

By throwing out the element of "reasonableness," the court "caught up with late 19th century liberal thought," says the *Asheville (N. C.) Citizen*, adding, that the thought itself is now "regarded in 'advanced' circles as perhaps old fashioned."

Far-reaching consequences were seen in the decision by *Indianapolis News*, saying: "It is not the decision that is especially disturbing, but the revelation that the court as now constituted is likely to upset other rulings and precedents upon which the people have relied for guidance."

* * *

'Rule of Reason' Rejected

Minneapolis Tribune, May 8

New Uncertainty

It is a far cry from NRA to the decision of the United States supreme court in the oil case. Twelve major oil companies, which in the early days of the new deal were guided into a policy of "stabilizing" prices, now are found guilty of violating the Sherman act, the violation consisting in conspiring to control the price of gasoline as sold in 10 midwestern states.

The decision strengthens the hand of the federal department of justice, as it carries on its far-flung anti-monopoly campaign. It adds to the practical difficulties of business men who are threading their way through the mazes of regulatory laws and bureau regulation, trying to find a safe and legal way to operate business and build up pay rolls.

The "rule of reason" announced by the high court back in 1911 is now rejected flatly in the 5 to 2 decision. The decision of that era has been a guide for succeeding cases. It held that "reasonable restraint" of trade was not in violation of the law. Now the court says that the rule cannot be applied to "combinations operating directly on prices or price structures."

In other words, all agreements among competitors that tend to stabilize prices at a definite level are illegal henceforth. The oil companies are found guilty because they got together to buy "distress gasoline" produced by independents, which was breaking the market. The prices paid for this gasoline determined the retail prices paid for gasoline in 10 midwestern states.

It was a price fixing combination, the court says, and that is the final word as to the oil business. What will it mean to others? There has been uncertainty as to whether a given stabilization of prices was "reasonable." Now there will be still more uncertainty as to what an industry may do without being judged guilty of conspiracy.

It may be said on behalf of the offending oil companies that if they had not stepped in to buy up the "distress" gasoline in 1935 and 1936, many of the independent producers would have gone broke, which also would have tended to restrict competition in the industry. There would have been a price war which consumers would have enjoyed for a while, but their last state might have been worse than the first. That reasoning does not appeal to the supreme court majority. The decision looks toward unrestricted competition, whether it may be a blessing or a curse. In the NRA days they called it "cut-throat competition."

* * *

New York Times, May 8

"In Restraint of Trade"

Lawyers will long argue about the wisdom or necessity of the sixty-seven-page decision which the Supreme Court by a majority of five to two has handed down against twelve Midwest oil corporations for alleged conspiracy to violate the 1890 Sherman Anti-Trust Act. The decision as it stands, however, obviously leaves our whole anti-trust attitude and policy in a chaotic state.

The evidence seems clear, not only in the whole record of the Government-approved NRA codes but in correspondence and reports of the Secretary of the Interior, for example that price "stabilization" operations of the oil companies were undertaken with the knowledge, approval and encouragement of Federal officials. The Supreme Court majority does not deny this. It merely declares: "Though employes of the Government may have known of the programs and winked at them, or tacitly approved them, no immunity would have been thereby obtained." In other words, one branch of the Government can pounce on you, fine you and jail you for doing what another branch of the Government may have urged you to do.

"Any combination which tampers with price structures is engaged in an unlawful activity," declares Justice Douglas in his decision. He must have meant this sentence to refer only to the court's interpretation of the meaning of the Sherman Act and not to describe the actual present state of affairs. For all sorts of combinations tampering with price structures are not only authorized by law but even made compulsory by law. In the bituminous coal industry the companies are compelled by law to fix uniform minimum prices. What they are punished for is any attempt at free competition in prices.

The charge of which the twelve oil corporations and five persons were found guilty was of forming a concerted movement to buy "distress gasoline" from independent refiners in 1935 and 1936. But the Federal Surplus Commodities Corporation is a branch of the Government set up for the very purpose of buying up so-called surplus farm commodities to remove gluts and support prices, and this is considered highly patriotic work. As if that were not enough, farmers are induced by tempting cash offers from the Government to combine to bring about a pro rata restriction of acreage. The Government does still more to hold up farm prices by extending "non-recourse" loans to farmers and, if necessary, keeping the equivalent of an entire year's crop off the market to raise prices. Milk farmers, again, are permitted and encouraged under various laws to combine to form "bargaining agencies" to get better prices. Workers, finally, are not only permitted to form combinations to raise the price of their labor, but the Wagner act deliberately encourages such combinations and has in many cases made the Federal Government, in effect, a unionizing agency.

It is impossible to detect in all this any consistent or well-thought-through set of principles. The Supreme Court thrown out a hint in declaring that if any shift in anti-trust policy is to be made from what the court at present interprets that policy to be, "it must be done by the Congress." In the TNEC, the so-called monopoly committee, there seemed at first a promise that at least an orderly study would be made of the subject. But members of the committee seem to be at loggerheads on the fundamental questions at issue, and instead of trying to frame some consistent body of principles, they have wandered all over the economic lot, looking here into life insurance, there into technological employment, or into any other side issue that caught their fancy.

* * *

Cleveland Plain Dealer, May 8

Score Against Price-Fixing

The famous Madison oil case which the Supreme Court decided Monday is an impressive victory for the government's campaign against price fixing under the Sherman Anti-Trust Act.

By a 5-to-2 division (Justices Hughes and Murphy not participating) the court sustains the conviction of 12 midwestern oil corporations and five individuals for conspiring to raise and maintain the price of gasoline in the middle west.

The decision, written by Justice Douglas, holds not applicable the "rule of reason" defense set up by the appellants. They contended that they were seeking to relieve the oil industry of an unsound situation, in which so-called "distress gasoline," the result of production far beyond the normal demand of the market had resulted in price wars which, it was argued, had destroyed or impaired normal competition.

Spokesmen for the defense in-

sisted that the oil men were merely doing of their own volition what the codes in NRA days had sought to require the oil and every other industry to do. Whatever the legal merits of this contention, it had much common sense behind it.

Justice Douglas, however, reaches the "irresistible conclusion" that their purpose was "not merely to raise the spot market prices but, as the real and ultimate end, to raise the price of all gasoline in sales to jobbers and consumers in the midwestern area." He adds that even "the knowledge or the acquiescence of the officers of the federal government" in the arrangement would not grant immunity.

Monday's decision puts new force in the Sherman act which at some periods in its 40-year history has seemed to be a relatively impotent piece of legislation. Justice Douglas is specific in his declaration that under the Sherman law any combination "formed for the purpose, and with the effect, of raising, depressing, fixing, pegging or stabilizing the price of a commodity in interstate or foreign commerce is illegal per se."

* * *

Texas Newspaper Comments

Dallas Morning News

Law But Not Justice

The view taken by the United States Supreme Court on the Wisconsin case charging against a group of oil companies violation of the Sherman Antitrust Act is that the law gives no discretion to the court. Nowhere in the majority opinion, apparently, is it held that the defense of the group lacks substance. That plea was simply that while the law might have been violated, the act was in the public interest.

What these companies did was to co-operate in forming a market for "distress oil." By taking it off the market, a dangerous competitive element which was breaking down the price structure and threatening the stability of the entire industry was removed. The move did result in raising the purchase price of oil. That was part of the intent. Also it is the intent of the interstate pact between oil states which Congress has blessed benignly. Everything that has been done in the name of oil conservation has been done with the vitally necessary profit motive first, although prorated production and other scientific devices to avoid flooded markets do assure a greater recovery of petroleum deposits.

A cease and desist order in the present case would have had no material effect, as the pool was formed to combat a particular situation. The fines imposed on the companies and individuals will not break them. In this respect the federal prosecution of an antitrust case was a vast improvement over the "death penalty" sought in the Texas suit initiated by James V. Allred as Attorney General of the state against an alleged violation of the antitrust act by oil companies. Nevertheless the government, in profiting financially from a move made during economic crisis to help, not to hurt, the situation, puts itself in an unenviable situation.

Certainly in the future any industry would be foolish to act cooperatively in the general interest if the government is to follow up with a Sherman Act bludgeon. The principal remaining inference to be drawn is that the Sherman Act needs revision.

* * *

New York Sun, May 7

An Old Rule Amended

The opinion presented by Justice Douglas for a majority of the United States Supreme Court in sustaining the conviction of twelve oil corporations under the Sherman act is one of the longest on record. It marshals a goodly number of choice words to say in effect that the old "rule of reason," which has obtained since 1911, has been amended by a new rule that any combination to fix prices, whether reasonable or unreasonable, is of itself a violation of the law.

In a dissenting opinion Justices Roberts and McReynolds argued that unless it had been found that the activities of the defendants had a "substantial tendency" to restrain competition, the trial court should have instructed the jury to bring in a verdict of not guilty. Justice Douglas argued, to the contrary, that any combination which tampers with prices is unlawful. Those who fixed reasonable prices today, he said, would "perpetuate" unreasonable prices tomorrow. Even though the members of a price-fixing group were in no position to control the market to the extent that they could lower or raise or stabilize prices, they would be "directly interfering with the free play" of the market.

The majority and minority differed sharply concerning the significance of the present ruling. The majority argued that it was a natural consequence of previous decisions and logically flowed out of them. Justice Roberts, speaking for the minority, said, on the other hand, that in no case ever before decided by the Supreme Court had it been held that a combination was illegal solely because its purpose or effect was to raise prices. In the present case, he said, there was "substantial evidence" that all the defendants did was to act in concert to eliminate "distress" gasoline; that what they agreed to and did neither fixed nor controlled prices, nor unreasonably affected normal competition; that "the purchase of distress gasoline at going prices" permitted such prices to rise to a normal competitive level.

"Distress gasoline" in less judicial language is often referred to as "hot oil," meaning stocks produced by independent refiners that in 1935 and 1936 resulted in heavy overproduction. Action taken by the defendants to alleviate conditions thus brought about in their business resulted in their indictment and conviction as conspirators within the meaning of the Sherman act.

The statutory structures of the nation and many of the States embody enactments regulating price fixing which gravely complicate a problem which is inherently of great complexity.

* * *

The Bridgeport Telegram, May 7

Price-Fixing Unpopular

The United States' Supreme Court has handed down another of those decisions about price-fixing, this time deciding that it's illegal.

The case before the court concerned 12 major oil companies and five individuals accused of conspiring to fix gasoline prices in the Middle West area. The charge was fought by the gasoline companies on the ground that the prices so fixed were reasonable and not arbitrary or unduly stiff. However the court decided that the Sherman Act (adopted in 1890) precludes price-fixing. Accordingly the defendants are found guilty.

We say in this case "another of those decisions," because the Supreme court has decided this same matter many different ways over a long period of years. In 1911 the Sherman Act was held to prohibit interstate conspiracies only when they restrained trade in an unreasonable manner. Since then some decisions have adhered to "the rule of reason" and others have departed from it. In this case attorneys for the defense tried to plead reason as an excuse for price-fixing.

Apparently we are entering an era in which fixed prices are held to be unreasonable per se and in which competition will rule the roost. We hope that is so for it is the American way and price-fixing never was popular.

Not even when Uncle Sam fixed the prices.

* * *

Chicago Daily News, May 8

The Oil Decision

The famous "rule of reason," with which the Supreme Court virtually ended the "trust busting" crusade of this century's first decade—Theodore Roosevelt's decade—is sharply curtailed today, in the opinion of many lawyers. The majority opinion of the Supreme Court Monday, affirming convictions in the oil case tried at Madison, Wis., in 1937, seems clearly to eliminate all questions of motive or reasonableness in Sherman Anti-Trust cases where the issue is trade restraint by price fixing.

This opinion fits the temper of the times, which has become less tolerant of all regimentation of business, including self-regimentation, since the NRA revealed the ultimate goal of such policies, if adopted or longer winked at. The rise of totalitarianism abroad, and abuses of power through collusion of business and union labor, have accelerated this tide of opinion.

The influence of former Justice Brandeis, exerted through Justice Frankfurter, is discernible in the decision, which is also paradoxically enough a setback for the "planned economy" doctrine that dominated the early phases of the New Deal.

The tenor of recent Supreme Court decisions warrants the expectation that the Supreme Court is at the beginning of another one of its long-time trends. It is reasonable to expect less effort to modify the plain intent of legislative enactments, even when the court may think that such would be desirable. Congress must no longer expect the Supreme Court to protect the country from congressional mistakes.

The decision Monday in the oil case will be regarded by many as posthumous vindication of Justice Harlan's famous dissents from the "rule of reason" doctrine, also as a step back to the congressional intent of 1890, expressed in the Sherman law.

It may be worth noting that the Sherman law passed in 1890 set up no new rule of law. It merely declared the common-law rule against monopoly and restraint of trade. Passage of the law was necessary then for two reasons. Prior decisions of the Supreme Court granting to corporations in interstate commerce the privileges of "persons" under the 14th amendment to the federal constitution had destroyed the power of the states and state courts to protect freedom of commerce. The states had been unfaithful in their trust to the nation by failing to safe-guard public rights in the granting of power under state corporation charters.

The Sherman law was the first definite step toward the rectification of those abuses, and in retracing its steps back to that statute, the Supreme Court is probably acting wisely.

* * *

Result of 'Nazified' Court, Says General Hugh Johnson

General Hugh Johnson, Cleveland Press, May 9

PITTSBURGH: The decision of the Supreme Court condemning part of the oil industry for a combination in restraint of trade, even though it was in the public interest, is not law but dogma.

It reversed what was thought to be the law, as recently handed down by that court itself. The "combination" here was for the purpose of preventing the dumping of "hot" oil on the market to the confusion of trade.

If "hot" oil is not stolen oil in the strict legal sense, it is nevertheless oil extracted and exported in violation of state or national laws. Those laws are in the interest of conservation of a great natural resource, a prime New Deal policy.

Anything that supports those laws is in the public interest unless it has some other anti-social effect, which is not the case here.

Our anti-trust laws condemn combinations in restraint of trade —without any further definition. The laws of other intelligent countries condemn such combinations which are not in the public interest.

But since there is not a contract in commerce that is not in some measure a combination in restraint of trade, our law had to have some judicial interpretation if it were to speak at all.

The effect of the many decisions that only "unreasonable" restraints were condemned meant just about the same thing as the more workable standard of other countries—the public interest. This new decision practically says that if an agreement affects price it is unlawful.

That is a legislative rather than a judicial result. It follows Fourth New Deal dogma in one of its two highly contradictory branches. It thus seems to be in accord with the Nazi formula that the judges must make no decisions which do not follow the political dictates of der fuehrer. It is a demonstration of the totalitarian trend of a packed court.

It is dogma, but it leaves the eager student at the New Deal fount of learning woozy with bewilderment. Prices in this field must be left to the unhampered effect of the law of supply and demand. This decision is of the very essence of "rugged individualism" and "laissez-faire," Adam Smith and "unplanned economy"—all New Deal bugbears.

At the same time the New Deal is the world's greatest advocate and practitioner of combinations in restraint of trade and price-fixing. It encourages or compels 6,000,000 farmers to combine to restrain production and trade in farm products for the purpose of raising prices.

The oil companies were not only permitted, they were urged by government itself in NRA to make this very combination for this very purpose.

Invalidation of NRA by the court on the ground that it delegated too much power certainly neither argued for nor forced any such change of Administration policy or court reversal as this.

Heaven knows where it leaves the law. In the indefiniteness caused by the broad wording of the statutes, a long process of judicial exclusion and inclusion was slowly giving us, case by case, some idea of what can and cannot be done. Business must start all over again to have the court tell it what they do or do not think it would be nice for it to do.

Such confusion, mystification and juridical sleight-of-hand is not justice. In fact, it is not justice to appoint men to great judgeships, not because they are great jurists, but because they are great protagonists of a particular political dogma.

The Hartford Times, May 7

Sherman Act Has Teeth

In upholding the conviction of 12 major oil corporations and five individuals who had been charged with conspiring to raise and maintain artificial gasoline prices in the Midwest in 1935, the Supreme Court of the United States demonstrates that the Sherman Act has teeth, which, properly used, can deal with any provable monopoly. It relieves Congress of the need to enact any further legislation along that line, and it gives to Assistant Attorney General Thurman Arnold an "all clear, go ahead" signal in his trust-busting program.

The case, commonly called the Madison case, was vitally important to the Government. If it collapsed, the Justice Department would be powerless to proceed in many other prosecutions in which illegal price-fixing is alleged. If it was sustained, violators of the Sherman Act might be expected to come in droves to Washington to make the best bargains possible with the Government.

The case reached the Supreme Court through an appeal by the Government from an order for a new trial issued by the Seventh Circuit Court of Appeals, which held that the trial judge had given erroneous instructions to the jury. The trial judge told the jury to find the companies and individuals guilty if it determined from the evidence that the defendants had the power and purpose, through their combination, to raise and maintain gasoline prices. The defendants contended that the jury should have been allowed to decide whether the prices set were "reasonable."

Five justices of the Supreme Court uphold the conviction; two, Justices Roberts and McReynolds, dissent, and two, Chief Justice Hughes and Justice Murphy, took no part in the case.

With the reasoning of the majority most laymen will agree. It is not proper that conspiracy to violate a law should be sanctioned, even though the outcome of the conspiracy is held to be "beneficial," or "reasonable." The majority opinion holds inapplicable the "rule of reason" which the Supreme Court applied in 1911, when it held that the Sherman Act prohibited only "unreasonable" restraints of trade. Now the majority of the Court stands upon the broad, fundamental principle of the act that there shall be no collusion or agreement that has the effect of destroying competition. Conspiracy, according to the modern interpretation, cannot be sanctioned by any "rule of reason."

The importance of this decision can hardly be exaggerated. It will not be surprising if many corporations and individuals against whom Sherman Act charges now are pending will rush to apply for consent decrees and to promise to mend their ways hereafter.

* * *

St. Louis Post-Dispatch, May 8

The Supreme Court Rereads the Sherman Act

The Supreme Court wrote some very important new law Monday. It did so in the decision holding 12 major oil companies and five individuals in violation of the Sherman Anti-Trust Act.

The decision is at variance with previously controlling anti-trust decisions of the Federal Courts, but in reality it is a belated recognition of the intention of Congress when it passed the Sherman Act just 50 years ago.

"Under the Sherman Act," said the court Monday, "a combination formed for the purpose and with the effect of raising, depressing, fixing, pegging or stabilizing the price of a commodity in interstate or foreign commerce is illegal per se."

Accepting this interpretation of the law, the ruling said in effect, the evidence clearly established a combination to raise prices. Shell Petroleum, Socony-Vacuum, Pure Oil, Sinclair, Phillips and the other defendant companies and individuals were properly convicted and must pay the fines assessed against them at the conclusion of the long trial in Madison, Wis., three years ago.

Where does this leave the historic rulings of 1911 in the American Tobacco and Standard Oil dissolution suits?

The majority sees no inconsistency for the reason that the 1911 decisions did not apply to "combinations operating directly on prices or price structures." That point is debatable, but there is no debating that Chief Justice White in 1911 laid down the famous "rule of reason" in anti-trust litigation and that this rule distinguished between "good" trusts and "bad." And what determined whether the combination belonged among the goats or the sheep was not that it fixed or did not fix prices but whether it used price fixing to ruin independent competitors.

The new decision will surely encourage Assistant Attorney-General Thurman Arnold in the anti-trust activities he is conducting for the Department of Justice. Yet there is no reason to believe that the decision will start him on a suit-filing spree.

For whatever the Supreme Court may have done to the "rule of reason" Monday, that has been Mr. Arnold's standard. He has said quite plainly that he has no desire to break up all mass production. He would disperse combinations where coercive power is arbitrarily used for selfish ends. He would regulate where control by government is in order. Mr. Arnold is a practical man and we may expect him to read this decision as he has read the anti-trust code—in a practical way.

* * *

Critics of Court's Decision Hit by Massachusetts Paper

Springfield (Mass.) Republican

Sherman Act and Free Enterprise

The United States supreme court's 5-to-2 decision against the 12 oil companies in the Midwest for a price-fixing conspiracy in violation of the Sherman antitrust law is not accepted gracefully by the spokesmen of business and finance. They criticize the court. They argue that the price-fixing was reasonable. They complain that there is no consistency in cracking down on private enterprise for price-fixing agreements while the government itself does lots of things that have the effect of increasing prices.

It amounts to this, that business, or rather big business, does not like the antitrust law. It never did. The law was designed to check the trend toward private monopoly. But, in one way or another, private enterprise has followed persistently in the past 50 years its integration tendencies. Some administrations have helped by deliberately weak enforcement of the act; or circumstances in the guise of an economic emergency created by depression have stayed the arm of the law.

The supreme court itself, in 1911, took some of the edge from the teeth of the law by promulgating "the rule of reason." Was a restraint of trade, forbidden by the act, reasonable or unreasonable? Such a test, of course, left to the courts the power to sanction in a broad zone of border-line cases, and of cases not so near the border line, combinations having a monopolistic trend.

The sour flavor of the comment today among most of the spokesmen for big business on the latest supreme court decision, which sharpens rather than blunts the teeth of the antitrust law, confirms again the view that "free enterprise" is for free enterprise only with reservations. Competition is at the core of the system of free enterprise. But the loudest champions of free enterprise today shrink from facing the broad economic implications of competition. They hate "price wars" in practice. "Cutthroat competition" they deprecate as ruinous. They get behind and encourage the economic forces of integration and consolidation that are constantly at work.

If they want private enterprise that is truly free, in the competitive sense, they should follow another course. They should cry for an enforcement of the antitrust law more rather than less strict. They should rejoice if the supreme court sharpens its teeth instead of squawking that free private enterprise these days finds government always hostile to it. For, the truth is that, in enforcing the antitrust law, the government is giving more elbow room to the true capitalistic economic process, which is based on genuine competition, in principle, as well as on profits for the enterpriser.

It seems a fair accusation that socalled organized business cannot stomach its own principles when applied fully and logically in the shape of the competitive capitalism of the old school. It preaches the virtues of free private enterprise, especially against the new deal's policies of a more highly developed government regulation; yet it protests against "atomization" as archaic and reactionary. At the same time, it accuses the government of socialism in spite of the attested fact that it is the government that is actually doing something, if not much, to make private enterprise "free."

In the same week that this administration succeeded in applying the antitrust law to the price-fixing combination of the 12 Midwest oil companies—but not until the supreme court's invalidation of the NRA codes, which were an emergency measure, had left the government exposed to the charge of promoting monopoly—what happened was so ironic that few would recognize the implications?

Wendell Willkie, head of the great utilities holding company, the Commonwealth and Southern, testified in court concerning his long fight against the TVA: "Here was direct government competition with a private industry which, at least from my viewpoint, I thought was a very erroneous economic, socialistic policy of government." And Frank Gannett, no less, who in private life owns and operates a big chain of newspapers, said in a political speech: "I charge that the new dealers do not believe in our form of government or system of free enterprise. They are driving steadily toward national socialism."

Mr. Willkie falsely assumes that his big holding company is a "private industry" in the ordinary sense; whereas, every unit of its far-flung structure of underlying operating power companies could not exist without a public franchise giving it a monopoly status. Certainly, that changes the aspect of the case when the government in the Tennessee valley is accused of competing with "free private enterprise."

Inconsistencies? Unquestionably. The administration's economic policies are streaked with inconsistency—as in this field of monopolistic trends. The invalidated NRA oil code, being now illegal, was followed by the prosecution of the 12 oil companies which started to regulate the industry on their own hook. But, in reality, the underlying issue in this case is whether the American economy shall be based on private or public regulation of something that needs regulating. It is futile to accuse the administration of socialism when the choice may necessarily be between public socialism and private socialism.

The inconsistency charge rebounds against those who bring it. For the economic system of private enterprise is itself a mass of inconsistencies. No good scholar in economics would deny that we have a mixed economy; that capitalism in its pure form does not exist; that what does exist—which the "new era" of the twenties bequeathed to us and the depression has in some respects further modified — is no more than a compromise system which conflicting interests and forces have imposed on the American people.

Whether this hopelessly mixed economy can be made to work adequately in the production and distribution of wealth is a more pressing question than the now academic dispute as to whether enterprise shall be wholly private and wholly free. The future of the antitrust law will probably be determined by the pragmatic answer to that more crucial question.

* * *

Greenville (S. C.) News

A Sweeping Decision

It is indeed, a "fresh" interpretation of the Sherman anti-trust act, as press dispatches put it, that has been handed down by the Supreme Court in the Midwestern oil cases, and one that appears at least to sharpen the teeth of this measure.

The Court in a five-to-two decision holds the oil companies guilty of violation of the law by conspiring to raise prices of gasoline. Justice Douglas, who wrote the majority opinion, held that any "combination formed for the purpose and with the effect of raising, depressing, fixing, pegging or stabilizing the price of a commodity in interstate or foreign commerce is illegal," and went on to point out that this would be true even though the resulting prices were "reasonable," even if done with good intentions by members of the combination, and without regard to whether or not particular price-fixing schemes are "wise or unwise, healthy or destructive."

In short, one would gather that the Court now construes the law to mean that any action of a combination done with the purpose of having any effect on prices, even though with the best intentions of merely stabilizing them, or even of reducing them, is a conspiracy in restraint of trade and a violation of the law. The Court has no authority to pass upon the intentions of the alleged combination nor upon the economic wholesomeness or unwholesomeness of the action, and if any such distinction is to be made it is for Congress to say so by a revision of the law. In this case the defendants contended that they had merely engaged in a "voluntary effort to remove distress gasoline" by purchasing the surplus of the refineries.

This undoubtedly will simplify antitrust prosecutions. It is not to be overlooked, however, that it will definitely bring within the scope of such prosecution many cooperative actions among business enterprises widely regarded as desirable from the standpoint of the broad economic effects.

And meantime, while the govern-

ment is prosecuting all such "combinations," regardless of intent, it is interesting to reflect that it is itself carrying forward agricultural programs designed, through cooperative farmer action, to increase or stabilize farm prices, on the ground that this is good for the farmer and the whole country's economic welfare.

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Asheville (N. C.) Citizen, May 8

No More Price Fixing

The "liberal" complexion of the United States Supreme Court has not recently been more clearly illustrated than by the five-to-two decision in the oil company case. The trust-busting first Roosevelt would have been overjoyed to read Justice Douglas's expression of the majority opinion: "A combination formed for the purpose and with the effect of raising, depressing, fixing, pegging or stabilizing the prices of a commodity in interstate or foreign commerce is 'illegal,' even though the resulting price is reasonable.

This latest interpretation of the fifty-year old and hotly contested Sherman anti-trust law will be a powerful support to the Department of Justice in its latest "trust-busting" campaign. For more than a generation the weight of legal opinion and judicial interpretation of the anti-trust laws has held to reasonableness as a criterion. Price-fixing has had to be "unreasonable restraint of commerce" to be illegal. In the future any combination for the sake of fixing prices, reasonable or unreasonable, will be against the law.

Now that the Supreme Court opinion has caught up with late nineteenth century liberal thought, the thought itself is regarded in "advanced" circles as perhaps old fashioned. Large scale production and nation-wide distribution have created problems which have changed in a measure the popular attitude toward combinations. The short-lived NRA of recent memory was an admission of this trend. It has taken the old liberals forty years to win their point, only to find the validity of the point itself seriously questioned by an important school of modern economic thinkers.

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Indianapolis News, May 9

Oil Price Case

The United States supreme court change-of-mind about what the Sherman anti-trust law means is bound to disturb the business structure of the country. The Sherman law was adopted in 1890. Its purpose—to prevent combinations to raise prices to an unreasonable extent—was generally commended. It was variously interpreted until, in 1911, the supreme court laid down the rule that price-fixing is not unlawful unless the fixed price is unreasonable. For nearly thirty years prices have been adjusted to that rule. On Monday the court changed its mind. It held that the law forbids "any combination which tampers with price structures."

The question went to the supreme bench on the appeal of several oil companies which were found guilty of fixing prices. They continued an oil products price adjustment which was set up as lawful under the NRA. The court of appeals reversed the circuit court on the ground that the judge had wrongly instructed the jury that any price fixing was unlawful. Now the supreme court has upheld the circuit court. The companies are guilty of something which from 1911 until 1940 was not a violation of the law.

It is not the decision that is especially disturbing, but the revelation that the court as now constituted is likely to upset other rulings and precedents upon which the people have relied for guidance. Lawyers will be unable to advise with assurance, and their clients are likely to elect to stand fast until they can be sure that they will not unintentionally violate a federal law.

The decision was written by Justice Douglas and concurred in by the New Deal group, plus Justice Stone. Chief Justice Hughes did not participate, nor did Justice Murphy. Justices Roberts and McReynolds dissented in a notable plea for reason. The decision will be taken by the country to commit the New Deal to a policy that it will be hard put to defend in its platform and campaign.

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The Hartford Daily Courant, May 7

The "Rule of Reason" Goes

The steady effort of the Supreme Court as reorganized by the New Deal to wipe out the "Judicial legislation" of the past has now resulted in what appears to be the repeal of the "rule of reason" set up nearly two decades ago to regulate the enforcement of the Sherman Anti-Trust Act. The decision of 1911 held that not all contracts in restraint of trade are forbidden by the statute but only such contracts as might be proved "unreasonable." Apparently that decision has now been set aside by the new one decreeing that even though the prices for gasoline fixed by the twelve oil companies that attempted to eliminate competitive evils in the Middle West were not unreasonable their undertaking nevertheless was against the law. The distinction made by another Roosevelt between "good trusts" and "bad trusts" would thus seem to be wiped out, and, as has so frequently happened in recent years, the dissent of the past—in this case that of Mr. Justice Harlan—has become the majority opinion of the present—delivered in the current instance by Mr. Justice Douglas.

Perhaps, as Mr. Justice Douglas contends, the Court is now only upholding a principle laid down forty years ago to the effect that price-fixing agreements are unlawful per se, not to be made lawful by a showing of competitive abuses. When adopted by Congress, the Anti-Trust Act made no exceptions for competitive abuses, and the implication of Mr. Justice Douglas is that until Congress makes such exceptions the Court cannot countenance them. His decision may settle the points of law at issue. It will not, unluckily, unscramble the economic system that has been erected upon the premise of the "rule of reason." Nor will it, any more than the Sherman Act itself, reverse the forces that for half a century have been driving industry and business toward highly centralized forms greatly unlike the economic units—the small shop, the small farm, the small bank—that the Anti-Trust Act was adopted to protect.

The hard fact is that the "rule of reason," like many other measures of the past forty years, came into being largely as the result of the need of the law to accommodate itself to the pressure that modern technology, modern financing, modern transportatioin, to mention but a few of a score of forces, were bringing to bear upon the economic system. The tendency toward centralization, involving a tendency away from competition, was a fact that had to be taken account of, and the business of government was to find the devices for so doing. The NRA, sponsored by the same Administration that brought the suits against the oil companies, was but the latest in a long series of such efforts, and there is ironic significance in the fact that it attempted to sanction the very kind of voluntary cooperation for eliminating competitive abuses that the oil companies are now told that they must not undertake. The Supreme Court as differently constituted found the NRA in violation of the basic law, but it had already broken down because it had ceased to command popular support, and its fate poses the dilemma that forty years of effort have not yet solved—the dilemma of a people that desire the advantages of the centralized economy without sacrificing the satisfactions of the dispersed economy that it has succeeded in so many areas.

The latest decision of the Court seems to put the problem squarely up to Congress. The Court will apply the Anti-Trust Act as it stands but it will not judicially amend it. Presumably it would enforce virtually any other law that Congress might in its wisdom decree, maybe even another NRA. Yet Congress probably has no strong ideas as to what kind of law it wants, although events may force it to gain some. The final responsibility rests with the people, but they are unfortunately handicapped by a deep uncertainty as to what they want most—the productive efficiency of the centralized economy or the rugged individualism promoted by the dispersed economy. At the bottom, the problem is one involving the kind of society that the people of the United States want to build and to maintain. It will not be got save by hard thinking and real sacrifice. Nor will it be gained by dodging behind shibboleths in order to avoid seeing the facts of growth and change.

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Baltimore Sun, May 8

The Supreme Court Sets a New Barrier to Price Fixing

By its ruling in the Madison oil case, decided on Monday, the Supreme Court has measurably strengthened the hands of the Department of Justice in all prosecutions under the Sherman anti-trust law. Stripped of non-essentials, the ruling of the court means that price-fixing practices, no matter how reasonable they may be, lead inevitably to the restraint of trade and hence are subject to prosecution under the Sherman Act.

The defendant oil companies were accused in this case of conspiring to take distress gasoline off the Middle Western market, thus lifting prices. They argued that the arrangement into which they had entered for this purpose was designed to do nothing more than eliminate abuses and promote fair competition, and that such undertakings were entirely legal. In other words, they contended that within reasonable limits price-control devices were tolerable under the Sherman Act. Justices Roberts and McReynolds wanted to accept this view and dismiss the convictions against the defendant companies and individuals. But a majority of the court, through an opinion delivered by Mr. Justice Douglas, held any price fixing whatever to be objectionable under the law. The "rule of reason" which the Supreme Court sought to read into the Sherman Act in 1911 has never applied to price fixing, this group said.

Such an interpretation of the law will be of great help to Mr. Thurman Arnold and his assistants in the anti-trust division. Had the contention of the defendants been accepted, the door would have been opened to all sorts of combinations among producers and distributors in the name of fair trade. On the pretext of eliminating cut-throat competition, groups of firms and individuals and also trade associations would have been able to take "surplus" products off the market at their option and engage in other practices tending to reduce the area of competition in interstate commerce. Prices would have been subject to manipulation in some cases and would have been under the protection of the Sherman law in others, with the Supreme Court determining in each particular instance the reasonableness or unreasonableness of measures to promote fair competition. In a word, the law would have been rendered more uncertain and hence less effective.

There is, to be sure, a certain irony in the circumstance that the Department of Justice is prosecuting oil companies and their officers in this case for price-fixing practices very similar to those which the Government sought to encourage and bless under the now unlamented NRA. There is also an ironical contradiction between the purposes underlying the attack on price fixing in the name of fair trade in this case, and the questionable tendencies of the Miller-Tydings fair price law, which specifically authorizes certain price-fixing devices, also in the name of fair trade. But the fact that policies in Washington have changed and that even now there are exceptions to the general rule which the Sherman law embodies does not detract from the significance and the promise of the finding that, in general, price fixing is taboo.

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Anti-Trust Law Policies Tossed Back to Congress

Philadelphia Bulletin, May 8

Strictly Up to Congress

The rule of reason, which the Supreme Court in 1911 declared should be applied to the interpretation of the Anti-Trust laws, was under consideration by both the minority and the majority of the Court in the opinions on the oil price-fixing cases on Monday.

In this case the defendants made agreements for the purchase, at a fair price of so-called "distress" gasoline, which otherwise would have been dumped on the market for whatever it would bring. This gasoline was then resold at a higher price level. The minority of two, for whom Justice Roberts wrote the opinion, held that there was no evidence of price-fixing, but only of "concerted action to remove a harmful and destructive practice in an industry." Such action, it was contended, even if it had the effect of raising the price level, was not in violation of the Sherman Act if it did not operate unreasonably to restrain interstate commerce.

The majority held that price-fixing had been established, and that agreements to fix prices were unlawful under the Sherman Act, even if the prices were reasonable and the agreements eliminated competitive abuses or evils.

The majority took the line familiar in recent decisions, that it was up to Congress to avert unfortunate consequences, if such resulted, of the prohibitions it lays down; that Congress had not given the Courts power to determine "whether or not particular price-fixing schemes were wise or unwise, healthy or destructive."

Price-cutting wars may have demoralizing effects on industry, tending to insecurity of jobs and needless unemployment.Under NRA the Government legalized agreements to prevent such consequences. If the Anti-Trust laws, as they stand today, prevent reasonable agreements, which by protecting industry and labor are advantageous to society, an argument for change may be presented.

Such change may be hastened, rather than obstructed, if the Courts take and maintain the position that the principle of the separation of powers puts it up to the legislative branch to repeal or revise its own action if and when its policies prove unwise.

OIL TRADE ASSOCIATION NEWS

End of Conflicting Dates Urged by Indiana Official

INDIANAPOLIS, Ind., May 13.—In an effort to prevent conflicting dates of state associations meetings and to arrange schedules for the mutual benefit of all concerned, George W. Hofmayer, secretary of Indiana Independent Petroleum Assn., today mailed letters to 7 associations, asking their co-operation.

Men to whom this letter was sent are G. B. Dickey, Tennessee Oil Men's Assn.; Herbert L. Clay, Kentucky Petroleum Marketers Assn.; G. A. Primm, Illinois Petroleum Marketers Assn.; Roy L. Brecke, Wisconsin Petroleum Marketers Assn.; Robert A. Warfel, Ohio Petroleum Marketers Assn.; A. C. Gienapp, Iowa Petroleum Assn.; and Elwin E. Hadlick, Northwest Petroleum Assn.

Text of Letter

Complete details are in Mr. Hofmayer's letter, which follows:

Gentlemen:—

You gentlemen, as well as the writer, have without doubt received suggestions from various suppliers that an effort be made to arrange dates of the coming spring conventions in a manner that would permit those who desire to exhibit merchandise to cover the various conventions with the least possible inconvenience.

For example, one supplier called me this morning and said that if it could be arranged whereby the meetings were set, say starting with Memphis, Tennessee, with a week between each meeting, they could go from there to Kentucky, Illinois, Wisconsin, Indiana, Ohio and over to Iowa. That under these circumstances it would warrant their preparing a proper exhibit and making all of these conventions.

He also mentioned the fact, of which you are no doubt aware, that the Ohio convention has been set for March 4, 5 and 6. Also that Iowa would like to hold their meeting before the middle of March.

A line-up following his suggestion would probably work out something like this:

Tennessee—Week of December 30.

Kentucky—Week of January 6.

Illinois—Week of January 20.

Wisconsin—Week of February 3.

Indiana—Week of February 17.

Ohio—March 4, 5 and 6 (This date has been set).

Iowa—Week of March 17.

Have a letter under date of April 27 from Robert A. Warfel of the Ohio association stating that the board of directors had set the dates for the Ohio convention as March 4, 5 and 6. Also have a letter under date of May 3 from Elwin E. Hadlick of Northwest Petroleum Association setting the Minnesota dates as Jan. 23 and 24. He stated that the North Dakota meeting had not been set, but that they do not have a trade exhibit in connection with that convention.

A set-up similar to this would necessarily require the various state associations to give and take a little as every organization has a certain period they like to hold such meetings. The Indiana association generally holds its spring meeting early in March, having a Fall Convention in October at which time officers and directors are elected. Thus, if the Indiana dates were moved up to the middle of February these conventions would only be four months apart.

However, feel confident that the board of directors of the Indiana association will be willing to go more than half way in any effort made to work out a schedule with other organizations to the mutual benefit of all concerned.

May we have your reaction and suggestions promptly?

Very truly yours,
INDIANA INDEPENDENT PETROLEUM ASSOCIATION
(Incorporated)
George W. Hofmayer

5 New Co-ops in Virginia

RICHMOND, Va., May 13—Sale of petroleum products to farmers is objective of 5 new oil co-operatives chartered by the Virginia Corp. Commission today, each with maximum capital of $50,000.

The 5 firms are: Culpeper Petroleum Co-operative, Inc.; Southern States-Winchester Petroleum Co-operative, Inc.; Southern States-Leesburg Petroleum Co-operative, Inc.; Southern States-Fairfax Petroleum Co-operative, Inc., and Southern States-Charlottesville Co-operative, Inc.

The home office of the co-operative group will be Richmond. Each corporation will have $50,000 maximum capital, of which $49,000 will be in 6 per cent preferred stock and $1,000 common.

Highway Users Hold 6-State Convention

By Teletype

LINCOLN, Nebr., May 11.—Feasiblity of a number of trade organizations with common interests meeting together was demonstrated when approximately 1000 oil marketers, refiners, petroleum transporters, truck operators, automotive accessory men, shippers, and motorists representing 10 organizations, attended Mid-West Highway Users Congress here May 9, 10 and 11.

Two conferences were held at the Congress; one on the diversion of highway funds by state governments, and another on traffic safety. Several speakers dealt with the problem of highway trade barriers erected by the states and their effect upon highway users. Speakers said that those affected should popularize their opposition and gain public support for demolition of the barriers.

Nebraska Commercial Truckers, at their meeting which was held concurrently with the Congress, passed a resolution requesting a Constitution amendment to prohibit diversion of highway funds.

The Congress was the first attempt of a meeting of this kind and was sponsored by the Nebraska Consolidated Transportation Assn., Inc., and included representatives from 6 states. Frank S. Henline, Lincoln, secretary of the Nebraska Petroleum Marketers' Inc., the director of the Conference, said that success of the meeting indicated its usefulness and that more such meetings would undoubtedly be held in the future.

Texas Group Plans 3-Day Convention

HOUSTON, May 13.—Approximately 2000 delegates are expected to attend the annual convention of Texas Assn. of Petroleum Retailers, August 27, 28, and 29, according to announcement today of Gene Rotan, president.

Mr. Rotan expressed the hope that members will plan to attend all three days of the convention.

Retailers Plan '40 Convention

MILWAUKEE, Wis., May 13.—Selection of oil men to represent the National Assn. of Petroleum Retailers at its eighth annual convention, Aug. 21, 22, and 23, at Chicago's LaSalle Hotel, was announced today by M. E. Holland, president.

This committee will represent N.A.P.R. in conjunction with committee appointed by Bradley Provis of Gasoline Retailers Assn. of metropolitan Chicago.

Committee members representing N.A.P.R., follow: A. D. Robertson of Kenosha, Wisconsin; R. Floyd, Harold Fox and David Shaw of St. Louis, Mo.; Guy Runyan of Des Moines, Iowa; W. B. Wylie of Los Angeles; Carl S. Johnson of Aurora, Ill.; Herbert Hess of Kankakee, Ill.; Warren Marshall of Chicago Heights; C. E. Reichelderfer of Peoria, Ill.; Arthur Uebner of Quincy, Ill.; Michael Monacatti and William Hartman of Detroit, Mich.; Fred King of Highland Park, Mich.; E. M. Blackburn of New Philadelphia, O.; Hugh Pallister of Cleveland, O.; Jules Collonius of Cleveland Heights; and M. A. Clark of Minneapolis, Minn.

Heads Service Bureau

OKLAHOMA CITY—John L. Dryer, president of Petroleum Service Bureau, with offices at 211 Biltmore Hotel, Oklahoma City, which plans a program for improvement of oil marketing conditions in the Sooner State. Mr. Dryer is associated with Dryer, Clark & Dryer Oil Co., Oklahoma City. Officers and directorate of the new organization include some of leading independent marketers of Oklahoma. C. J. Hunter, of Oklahoma City, has been retained as general manager of the service bureau.

John L. Dryer

Madison Decision Raises Serious Question

As to what Any Oil Men Can Talk About

(*Continued from Page* 16)
criminal cases that the New Deal's Department of Justice is filing, where the grand jury will permit. A criminal case is personal to the individual and not a matter of company conduct nor what one of 10 or 20 thousand employes might have done. A criminal case punishes with a personal fine and imprisonment of the individual, not of the company.

As long as it is the government's policy, or may be its policy, to drag every one possible into such suits the breadth of such attacks will be considerable even possibly to including the small companies, at least as co-conspirators, as was done with small refiners at Madison.

If, when a small group of Independent marketers or dealers get together and entirely innocently and, so far as they know, legally, discuss "competitive evils"—if from now on discussion of those at any time can be legal—and one of the group has talked to the representative of a major oil company about such "evil" or subsequently talks to him, this Supreme Court decision would seem to say quite clearly that such group plus the major oil company, are guilty of a violation of the Sherman law.

All this is no idle conjecture, what with an administration at Washington that is attacking big business wherever it can and is particularly trying to take over the oil industry and put it under the "protective" wing of Secretary of the Interior Ickes, and what with its criminal indictments and what with the development by energetic attorneys of triple damage suits.

We say with all the sincerity and conservatism possible that this last court decision will undoubtedly have a most profound effect on all business and particularly on all oil men both of big companies and small companies. And the effect may not be at all to the liking of many people except those in the prosecutors' offices.

The oil industry will undoubtedly find from now on just the reverse of trade contacts which reached an unfortunate climax during the code period of 1933 to 1935. This at-arms-length situation undoubtedly will not be conducive to the best interest of the oil industry which today needs to get together and discuss more frankly and more freely than ever "competitive evils" and "unprofitable prices" and all else that the Supreme Court says "combinations" of business men cannot discuss except at peril of violating the Sherman Law.

(Editorial note—There are so many angles in this Supreme Court decision that promise to affect so many seemingly innocent acts of all oil men, that these points will be discussed in future issues. I feel the oil industry, in its relations with government, has reached another turning point such as it reached at the inauguration of the code period. Then I said that chiefly ill could come of the relationship and if you will look back over my editorials, I inveighed at length and frequently and even caustically against the evils of the relationship and the troubles that might come from it. I said the day would come when oil men, and other business men, would find themselves sadly disillusioned. That day has long since arrived. Where this new road as outlined seemingly by the Supreme Court and which will be surveyed by the New Deal's Department of Justice, will lead only time can tell. I doubt if any prophet will venture very far down it. But at all events full and frank discussion of the prospects should be helpful to all, including "yours truly". WCP.)

Dr. Ipatieff Awarded Medal By Chicago Section of A.C.S.

CHICAGO, May 6.—American Chemical Society, Chicago Section, will honor Professor Vladimir N. Ipatieff at a meeting at the Stevens Hotel, May 24, when he will receive the Willard Gibbs medal for "conspicuous contributions in chemistry," awarded each year by the Chicago section of the Society.

Professor Ipatieff, born 73 years ago in Moscow, is director of chemical research of Universal Oil Products Co., and professor of chemistry at Northwestern University. He was the inventor of the U.O.P. catalytic polymerization process for producing polymer gasoline from cracked gases.

Various institutions have honored Professor Ipatieff for his achievements, the latest award being the honorary degree of Doctor of Chemistry, conferred on him by the University of Sofia, Bulgaria, during his visit to that country last May. He is the author of over 200 scientific articles and monographs and has been granted more than 50 U. S. patents.

Cary Wagner Presides

Cary R. Wagner, chairman of the Chicago Section and chief chemist of The Pure Oil Co., will preside at the presentation dinner. Professor Paul Haensel of Northwestern University, a long-time friend of the medalist, will speak on "Ipatieff the Man." Dr. Gustav Egloff, U.O.P. research director, will discuss "Ipatieff and His Chemical Achievements."

Dr. V. N. Ipatieff

An address of acceptance, prepared by Professor Ipatieff, will be presented by Dr. J. C. Morrell at Northwestern University on Saturday morning, May 25th.

The medal was established in 1911 by William A. Converse, for many years president Chicago Section of A.C.S., in honor of Willard Gibbs, professor of mathematical physics at Yale University, 1871 to 1903. Dr. Ipatieff is the 29th recipient. Previous medalists include Dr. William Burton, former Indiana Standard president who developed first commercial cracking process.

Gasoline Stocks Cut To 101,317,000 Bbls.

By Teletype
N. P. N. News Bureau

NEW YORK, May 14.—Total stocks of finished and unfinished gasoline were reduced another 746,000 bbls. to 101,317,000 bbls. while stocks of distillate and residual fuel oils increased 1,836,000 bbls. in week ended May 14, according to American Petroleum Institute report today.

Texas Gulf and California again shared in larger part of gasoline stock reduction, with storage at the Texas Gulf reduced 257,000 bbls., and California, 200,000 bbls. Stocks in the Louisiana Gulf district increased 114,000 bbls., although gasoline production there was down 22,000 bbls. from previous week.

Daily average crude runs to stills for the country as a whole increased 115,000 bbls. to 3,620,000 bbls. daily. Largest increase in distillate and residual fuel stocks was in the East Coast district, where inventories increased 1,199,000 bbls. to a total of 15,122,000 bbls. on May 14.

Review of Oil Orders Provided in New Bill

N. P. N. News Bureau

WASHINGTON, May 13. — Identical bills have been introduced in House and Senate providing for judicial review of decisions, orders, etc., of Secretary of Interior, relating to disposition of any part of the public domain within jurisdiction of Interior Department and involving proprietory rights or other direct and active interests of the U. S. adverse to those of party aggrieved. Right within 30 days after issuance of order to appeal to Circuit Court of Appeals, is provided.

Proposal was offered in S 3943 by Sen. O'Mahoney, Wyo., and HR 9708 by Rep. Dempsey, N. Mex.

Proposed legislation would apply to leases under oil and gas leasing act. Senator O'Mahoney explained, in introducing bill, that legislation is designed to avoid government passing upon validity of its own claims in certain instances. He mentioned specifically certain cases brought to his attention in committee discussion of Walter-Logan bill to allow court review of departmental regulations and orders. These concerned cases initiated several months ago by Interior Department against certain placer claims to oil lands in Lance Creek, Wyoming.

Domestic 'Gas' Demand Up 5%, But Exports Drop in March

N. P. N. News Bureau

WASHINGTON, May 11.—Domestic motor fuel demand in March totaling 44,607,000 bbls. was 5% above a year ago, Bureau of Mines reported today, adding figures "were not particularly encouraging" and that exports, 2,265,000 bbls. were "barely more than half" March, 1939 figure, and "total demand showed practically no change."

Stocks "continued to rise to record levels," finished up 3,700,000 bbls., unfinished up 700,000 bbls., for a total of 103,710,000 bbls. on March 31.

All records for crude oil production were "smashed" in March, with daily average production of 3,873,400 bbls., 126,200 bbls., above February average and 429,300 bbls. (12.5%) above March 1939 average. "Virtually all of the gain" was recorded in Texas and Illinois where production reached a new peak of 438,100 bbls. daily, 33,700 bbls. above previous peak in February.

Peak demand for distillate fuel oil has passed, bureau says, but yield of gasoline declined from 42.4% in February to "unusually low average" of 42.2% in March, and yield of light fuel oil decreased materially, but nearly all minor products gained.

"These changes indicate difficult situation brought on by excessive runs to stills and unbalanced yields in prior months," Bureau remarks. Domestic demand for various classes of fuel oil was "well ahead of last year," kerosine 21%, gas oil and distillate 18% and residual fuel oil 9%.

Texas May Set 3-Month Quota

N. P. N. News Bureau

TULSA, May 13.—Signs now point to a statewide proration allowable order in Texas, beginning with June, which will be unchanged for 3 months. Just how close the allowable will be to recommendations of Bureau of Mines is not so clear but at present there are more favorable indications that Texas Railroad Commission may try to match the two figures more closely.

The three-month order—for June, July and August—will come in right handy for two of the three commissioners, who will be deep in their gubernatorial campaigns. They are Commissioners E. O. Thompson and Jerry Sadler. Chairman Lon Smith has decided not to campaign this year.

Commissioner Thompson has forecast, meanwhile, a price increase of 15c per barrel for crude before end of the summer season, if the operators "hold their pace and do not try to get more oil than the Bureau of Mines recommendations" and if the regulatory bodies abide by the bureau's recommendations and set an allowable for three months.

Thompson Hits Tanker Rate

Col. Thompson also condemned the recent increases in tanker tariffs, and charged the increases represented a "double squeeze" play. He said companies owning the tankers could absorb additional cost, so they could cut the price of gasoline in the East and place at a disadvantage to those who had to pay the increased tanker rates.

Nebraska Gets New Well

TULSA, May 11.—Nebraska's second oil well was brought in May 9 near Falls City, Richardson county. The wildcat test was drilled by the Pawnee Royalty Co. at Odessa, Tex., drillers of the first well which finally was abandoned.

New well was reported to have had an initial flow of 20 bbls. an hour after acid treatment. Production was found in the Hunton lime.

Burner Shipments Rise

WASHINGTON, May 11.—Oil burner shipments were up 35% during first quarter this year over similar period of 1939, Commerce Department reports, 170 American manufacturers shipping 37,255 burners in January-March as against 27,083 shipped by 178 manufacturers during first quarter last year.

March shipments of 12,770 compared with 10,671 in March 1939 and 7,867 in March 1938.

Humble's Injunction Halted

WASHINGTON—U. S. Supreme Court stayed enforcement of injunction obtained by Humble Oil & Refining Co. against Texas Railroad Commission's proration order in East Texas field.

'Gas' Consumption Gains in 42 States

NEW YORK, May 10.—Gasoline consumption in the United States was 4.37% higher in February, 1940, than in February, 1939, according to American Petroleum Institute. However, 1940's February had one more day.

States showing considerable increases were North Dakota with 66.39%; West Virginia, 22.32%; Minnesota, 16.57%; Idaho, 15.91%; Montana, 15.60%; and New Mexico, with 15.45%.

Four states had decreases: Kansas, Mississippi, Nevada and Tennessee.

Gasoline consumption for the first two months of 1940 was 5.36% higher than for a like period in 1939, A.P.I. reports.

Gains for both Dakotas, for this two month period, were shown, with North Dakota up 36.05%, and South Dakota up 19.50%.

Six states, Kansas, Kentucky, Missouri, Nevada, Oklahoma, and Tennessee, had decreases.

Gasoline Consumption by States, February 1940

(Figures in thousands)

	Month of			2 Months Ending With		
	Feb., 1940 Gallons	Feb., 1939 Gallons		Feb., 1940 Gallons	Feb., 1939 Gallons	
Alabama	18,101	17,257	+ 4.89	36,228	35,507	+ 2.03
Arizona	8,630	7,662	+12.63	17,540	15,891	+10.38
Arkansas	12,388	11,712	+ 5.77	25,831	25,546	+ 1.12
California	131,111	125,151	+ 4.76	274,693	259,444	+ 5.88
Colorado	14,848	13,411	+10.72	30,752	28,775	+ 6.87
Connecticut	22,875	21,144	+ 8.19	48,203	44,271	+ 8.88
Delaware	3,816	3,664	+ 4.15	7,787	7,332	+ 6.21
District of Columbia	11,169	10,305	+ 8.38	22,693	21,075	+ 7.68
Florida	37,803	34,743	+ 8.81	76,079	69,051	+10.18
Georgia	28,180	26,723	+ 5.45	55,870	54,318	+ 2.86
Idaho	5,574	4,809	+15.91	11,112	10,038	+10.70
Illinois	92,330	84,775	+ 8.91	192,813	175,858	+ 9.64
Indiana	44,006	37,965	+ 1.59	92,088	80,534	+14.35
Iowa	33,788	31,883	+ 5.97	69,173	66,316	+ 4.31
Kansas	28,612	29,578	— 3.27	56,841	60,082	— 5.39
Kentucky	19,723	17,776	+10.95	38,688	38,743	— 0.14
Louisiana	20,070	18,317	+ 9.57	40,713	38,556	+ 5.59
Maine	8,995	8,133	+10.60	18,488	16,733	+10.49
Maryland	20,181	18,639	+ 8.27	41,055	38,006	+ 8.02
Massachusetts	45,329	44,255	+ 2.43	97,150	91,666	+ 5.98
Michigan	80,206	72,413	+10.76	166,055	148,053	+12.16
Minnesota	33,159	28,446	+16.57	71,078	60,130	+18.21
Mississippi	11,882	13,838	—10.13	27,238	27,148	+ 0.33
Missouri	43,388	41,774	+ 3.86	88,841	88,867	— 0.03
Montana	6,142	5,313	+15.60	12,948	11,676	+10.89
Nebraska	14,991	14,275	+ 5.02	30,897	30,840	+ 0.18
Nevada	2,434	2,452	— 0.73	4,860	5,097	— 4.65
New Hampshire	5,640	5,255	+ 7.33	11,893	11,103	+ 7.12
New Jersey	60,990	55,699	+ 9.50	125,061	113,148	+10.53
New Mexico	7,518	6,512	+15.45	15,362	13,762	+11.63
New York	121,009	112,574	+ 7.49	256,397	238,159	+ 7.66
North Carolina	30,603	27,964	+ 9.44	62,992	62,398	+ 0.95
North Dakota	6,742	4,052	+66.39	13,059	9,599	+36.05
Ohio	97,842	84,951	+15.17	200,782	179,891	+11.61
Oklahoma	29,141	27,930	+ 4.34	57,993	58,750	— 1.29
Oregon	15,990	14,295	+11.86	32,132	29,316	+ 9.61
Pennsylvania	100,138	92,214	+ 8.59	211,551	190,834	+10.86
Rhode Island	8,535	7,718	+10.84	18,022	16,633	+ 8.35
South Carolina	16,659	14,979	+11.22	33,326	31,109	+ 7.13
South Dakota	7,335	5,917	+23.96	15,800	13,222	+19.50
Tennessee	19,398	21,329	— 9.05	41,198	46,744	—11.86
Texas	100,565	95,601	+ 5.19	205,536	196,048	+ 4.84
Utah	6,487	5,668	+14.45	12,851	12,233	+ 5.05
Vermont	4,081	3,867	+ 5.53	8,723	8,023	+ 8.72
Virginia	25,823	24,974	+ 3.40	51,732	50,836	+ 1.76
Washington	23,814	21,590	+10.30	47,711	43,882	+ 8.73
West Virginia	15,922	13,017	+22.32	28,058	26,649	+ 5.29
Wisconsin	35,209	31,569	+11.53	75,005	66,589	+12.64
Wyoming	4,133	3,665	+12.77	8,193	8,004	+ 2.36
Total	1,543,325	1,427,753	+ 8.09	3,189,091	2,976,485	+ 7.14
Daily average	53,218	50,991	+ 4.37	53,152	50,449	+ 5.36
Change from previous year:						
Total change	+115,572	.....	.....	+212,606	.....	.....
Percentage change in daily average	+4.37%	.....	.....	+5.36%	.....	.....

Latest Oil Industry Statistics

Trends of Basic Figures

	May 11, 1940	May 4, 1940	May 13, 1940
Crude Production (*Bbls. daily*)	1,419,563	3,679,050	3,402,500
Crude Imports (*Bbls. daily*)	111,570	153,860	76,143
Crude Runs to Stills (*Bbls. daily*)	3,620,000	3,505,000	3,400,000
Gasoline Stocks (*Bbls. total*)	101,317,000	102,063,000	84,808,000
Gas Oil & Distillate Stocks (*Bbls. total*)	26,552,000	25,658,000	25,993,000
Residual Fuel Oil Stocks (*Bbls. total*)	109,967,000	103,043,000	108,513,000

Crude Oil Production for the U. S.

(American Petroleum Institute figures)

	Week Ended May 11 Barrels	Week Ended May 4 Barrels	Week Ended April 27 Barrels
Oklahoma	406,200	409,350	408,100
Kansas	149,350	147,650	152,600
Nebraska	.....	.....	.....
Texas	1,457,400	1,367,800	1,515,750
Louisiana	297,650	294,000	288,550
Arkansas	70,150	69,100	69,650
Mississippi	7,400	7,800	7,500
Illinois	439,150	421,550	438,200
Indiana	11,100	9,600	9,550
Eastern (Ill. and Ind. excluded)	98,050	100,400	96,000
Michigan	62,200	62,250	61,900
Wyoming	69,950	66,400	69,350
Montana	17,500	17,500	17,450
Colorado	3,400	3,750	3,650
New Mexico	106,850	106,800	113,000
California	629,100	595,100	594,000
Total U. S.	3,825,450	3,679,050	3,845,000
Crude Imports	111,570	153,860	111,570
Total New Supply	3,937,020	3,832,910	3,956,570

Weekly Changes in Crude Oil Stocks*

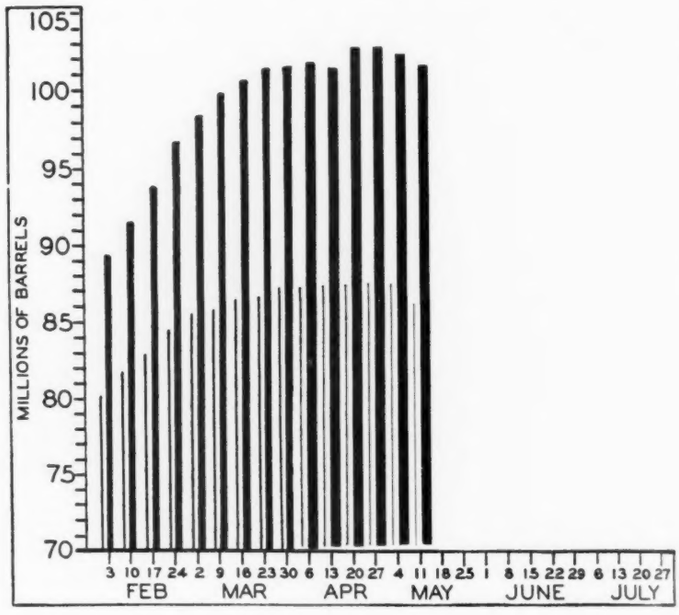
(Thousands of barrels)

Grade or origin	April 20	April 27	May 4	Change from April 27
Pennsylvania Grade	4,372	4,399	4,460	+ 61
Other Appalachian	1,191	1,221	1,167	— 54
Lima-Michigan	1,663	1,558	1,565	+ 7
Illinois-Indiana	20,094	20,221	20,347	+126
Arkansas	3,038	3,101	3,096	— 5
Kansas	8,314	8,242	7,957	—285
Louisiana:	11,278	11,223	11,186	— 37
Northern	4,155	3,964	3,904	— 60
Gulf Coast	7,123	7,259	7,282	+ 23
New Mexico	6,995	6,899	7,121	+222
Oklahoma	63,566	63,811	64,184	+373
Texas:	78,691	80,432	81,637	+1,205
East Texas	18,429	19,064	19,225	+161
West Texas	17,382	18,126	18,076	— 50
Gulf Coast	19,230	18,943	19,768	+825
Other Texas	23,650	24,299	24,568	+269
Rocky Mountain	16,947	16,994	16,816	—178
California	36,121	35,975	36,133	+158
Foreign	2,611	2,594	2,541	— 53
Total U. S. refinable	254,881	256,670	258,210	+1,540
Heavy in California	13,432	13,663	13,349	—314

*As compiled by U. S. Bureau of Mines.

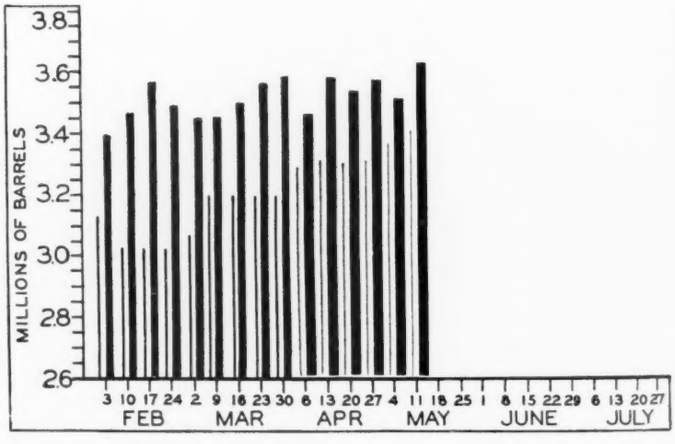
Total U. S. Motor Fuel Stocks

Heavy Line—1940 Light Line—1939



Daily Average Crude Runs to Stills

Heavy Line—1940 Light Line—1939



A. P. I. Weekly Refinery Report

(Figures in Thousands of Barrels of 42 Gallons Each)

Districts	Daily Average Crude to Stills Week Ended		Per Cent of Reporting Capacity Operated Week Ended		(a) Gasoline Production Week Ended		Stocks Total Finished & Unfinished Motor Fuel (b) Week Ended		Stocks of Gas Oil & Distillates At Refineries Week Ended		At Terms. Trans. Pipelines Week Ended		Stocks of Residual Fuel Oil At Refineries Week Ended		At Terms. Trans. Pipelines Week Ended	
	May 11	May 4	May 11	May 4	May 11	May 4	May 11	May 4	May 11	May 4	May 11	May 4	May 11	May 4	May 11	May 4
East Coast	576	535	89 6	83 2	1,270	1,469	23,429	23,615	2,335	2,053	4,016	3,922	3,666	3,265	5,105	4,683
Appalachian	121	118	85 2	83.1	411	387	4,084	4,140	268	287	116	110	643	615	.....	.....
Ind., Ill., Ky.	566	548	95 4	97 7	2,194	2,100	18,152	18,179	2,387	2,329	243	258	3,090	3,087	51	42
Okla., Kans., Mo.	287	291	88 9	90 1	(c)999	(c)934	8,126	8,161	992	973	31	22	1,899	1,880	.....	.....
Inland Texas	126	108	75 4	64 7	520	484	1,936	1,924	278	279			1,445	1,453	.....	.....
Texas Gulf	857	858	93 8	93 9	2,585	2,576	15,051	15,308	3,206	2,938	436	442	4,819	4,837	359	259
La., Gulf	116	127	72 5	79 4	293	315	3,086	2,972	733	785	29	34	691	798	244	274
No. La., Ark.	47	36	90 4	69 2	122	97	552	620	205	194	9	12	438	418	.....	.....
Rocky Mt.	43	37	65 2	56 1	200	202	1,661	1,699	147	149			605	606	.....	.....
California	513	485	70 3	66 4	1,325	1,271	18,175	18,375	7,832	7,683	2,034	1,973	55,023	55,242	23,727	23,414
Total Reporting	3,252	3,143	85 8	83 6	9,919	9,835	94,252	94,993	18,383	17,670	6,914	6,773	72,319	72,201	29,486	28,672
U. S. Total (d)	3,620	3,505			11,401	11,370	101,317	102,063	19,103	18,360	7,449	7,298	74,289	74,166	29,696	28,877
U. S. Total 5-11-39 (d)	3,412				11,205		86,349		19,596		7,351		80,052		29,915	

(a) Includes straight-run, cracked and natural blended

(b) Includes stocks at refineries, in bulk-terminals, pipe lines and in transit.

(c) 12% of reporting capacity in this district did not report gasoline production.

(d) Estimated, U. S. Bureau of Mines basis

Refining Technology

INCLUDING INTERNATIONAL PETROLEUM TECHNOLOG

THE Natural Gasoline Association of America, meeting for its nineteenth annual sessions this week in Tulsa, has been in existence slightly over half as long since the first equipment was installed to recover casing-head gasoline. These past 19 years, however, constitute the major portion of the years during which natural gasoline production has really been an industry and has made its most rapid growth. Back in 1921, when the association was organized, gasoline was so hard to vaporize in motor car engines that one of the principal subjects of interest at meetings of the Society of Automotive Engineers was how to apply heat to intake manifolds, Dr. T. A. Boyd, General Motors Corp., stated recently.

Getting more volatility in gasoline was accomplished in two ways during the first decade of the N. G. A. A., one by the development of the cracking process and the other by blending natural gasoline into motor fuel. Early development of natural gasoline plants was slow, but not so during the nineteen twenties. By the end of 1927, when the first count was made, there were 1150 natural gasoline plants in the U. S. producing 4,000,000 gallons of natural gasoline daily. Today these plants are larger in capacity, total not over two-thirds as many, but are producing 5,750,000 gallons per day, about half of plant capacity in both instances. If this were of the same specification as motor fuel, this rate of production would supply U. S. demand for over one month of the year.

During the past few years, the cry of the industry has been to induce motor car engine designers to design a carburetor and manifold system which would prevent more volatile fuel from vapor-locking. A volatility higher than was available 20 years ago was highly welcome to the engine designer because engines were being strangled by the small intake pipes needed to get the wet or unvaporized mixtures into them, to put it into the words of Dr. Boyd. Today, owing largely to the more volatile gasoline, "the automobile engine is able to get its breath much more easily, and the air it breathes does not have to be so hot and stifling either."

New uses have been made of natural gasoline and continue to be made by technological advances. One of the present trends in natural gasoline plant operation is the recovery of a wider range of hydrocarbons, including all of the propane and butanes, for sale not only as liquefied gases but to be used as charging stock for polymerization plants. One of the results of this trend has been the extended use of high-pressure absorption equipment.

This has had the further effect of producing new difficulties in plant operation. One has been hydrate freezing troubles and another the need for equipment of higher operating efficiency to hold the higher pressures. On the following pages is an article summarizing a number of methods for overcoming hydrate freezing troubles by means of several types of gas dehydration equipment.

With polymerization processes coming into more common use, more of refiners' butane is being utilized with the result that natural gasoline is replacing butane in bringing up volatility requirements of motor fuel in the refinery. Alkylation is having a similar effect but it is also of more direct importance to natural-gasoline manufacturers because in certain areas they themselves have all of the raw materials required in the alkylation process. Natural gasoline plants as a whole will be able to supply increasing quantities of isobutane and isopentane for a process which is bound to become of increasing importance in production of high octane aviation fuels and even motor fuels.

Much significance is now being attached to the recent discovery that the lighter hydrocarbons pass from vapor to liquid state and then back to the vapor state on continuous increase of pressure. Because this reverses the normal procedure, condensation with release of pressure is called retrograde condensation. This phenomenon will bring about new techniques of producing natural gasoline where normally liquid hydrocarbons are maintained in the vapor phase in oil producing horizons by high pressure. The new production method, known as recycling, presents problems of plant design and operation which have yet to be solved.

★ ★ ★

The power to be made available in contemplated electric plant installations at recently constructed dams in the Tennessee river by the Tennessee Valley authority seems of awe-inspiring magnitude when figures are lumped together. And, indeed 715,400 horsepower is no small figure for horsepower concentrated in a few power plants at Wilson Dam, Norris Dam, Pickwick Landing Dam, Guntersville Dam, and Chickamauga Dam.

But like the contrast between the astronomer who looks through his telescope and the biologist who looks through his microscope, the relative importance of size depends upon the point of view. Dr. Robert E. Burk, Western Reserve University, in a recent article on "What Chemistry is Doing to Us and for Us" makes the Tennessee valley development take the proportions of particles requiring a microscope when he compares anticipated water power gains with power gains derived from improved methods in oil refining.

The power to be derived from these dams is less than one-tenth of one per cent of the horsepower gained from anti-knock and cracking research, Dr. Burk points out. Few, perhaps, fully realize the significance of this research until it is compared with such monumental work as the Tennessee river dams. The gain in power made available in gasoline by cracking processes and higher octane number is close to a billion horsepower, Dr. Burk points out, yet it represents only 10% more power in a gallon of motor fuel. It is little wonder that he refers to the Tennessee river as "that remarkable river . . . . which runs through Tennessee but drains all 48 states."—M. G. V.

Gas Dehumidification Prevents Hydrate Freezing Troubles

By E. G. Hammerschmidt*

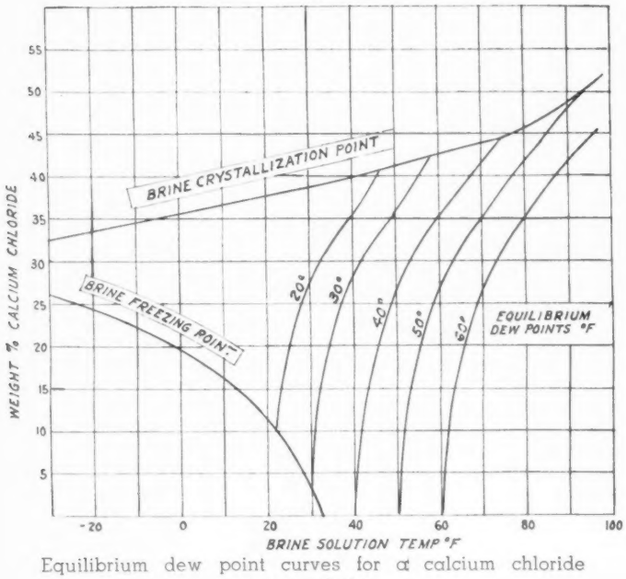
Presented before the Natural Gasoline Association of America at its Nineteenth Annual meeting in Tulsa, May 15-17, 1940

ABSTRACT

Various methods of eliminating hydrate freezing troubles in natural gas and natural gasoline plants are summarized. In general, all the methods remove water condensate and sufficient water vapor from a system so that additional condensation cannot occur at the minimum temperature and/or maximum operating pressure encountered in the system.

A number of dehumidification processes have been developed, involving contact with both solutions and solids. Seven gas-washing solutions are described, including calcium chloride brine, a commonly used process because of low cost solution, diethylene glycol, also much used, and lithium chloride, which is one of the most hygroscopic of all inorganic compounds but not yet used in gas dehumidification.

Solid adsorbents make for an economical plant design because of the relatively small quantity required. Silica gel has been used successfully for several years. Activated alumina, anhydrous calcium sulfate, and bauxite impregnated with manganous chloride are mentioned also.



Equilibrium dew point curves for a calcium chloride brine solution

NEARLY all freezing troubles in natural gas pressure systems are caused partially or entirely by hydrocarbon hydrates, crystalline chemical compounds of methane, ethane, propane or isobutane in which water is present in simple molecular proportions. The natural gasoline and liquefied petroleum gas manufacturers are directly concerned with the hydrate problem wherever they are dealing with high pressure gas at moderately low temperatures. Hydrate troubles in high pressure gas systems may be permanently eliminated by removing the water condensate in the system, together with a sufficient amount of the water vapor in the high pressure gas so that additional condensation cannot occur at minimum temperature and maximum operating pressures. In other words the dew point of the gas must be at least as low as the minimum temperature of the system when it is at maximum operating pressure. (Dew point is defined as the temperature of the gas at which liquid water begins to form.) A partial dehydration, or dehumidification, of the gas is therefore sufficient to meet the operating requirements of a great many high pressure systems. The operating cost of a dehumidification plant falls within the range of 0.02 to 0.12 cent per 1000 cu. ft., according to Shively[3]. Baker and Partridge[1] state that the expense of full time operators at a dehumidification plant is by far the largest item of operating cost. They also indicate that in certain cases, these plants may be made fully automatic, in which case the services of full time operators may be dispensed with. Clark[4] reports an operating cost of 0.116c per 1000 cu. ft. for a combination refrigeration and brine absorption plant. This cost was based on one year of operation at a daily throughput of 45 million cu. ft. and during this period, half of the time of one man was sufficient to control operation, which is stated to be nearly automatic.

Liquid Absorbents:

The magnitude of the dew point lowering that may be effected by any aqueous hygroscopic mixture is dependent both upon the contact temperature and the nature of the hygroscopic material. The residual water vapor content of the dehumidified gas is also affected by the total pressure on the system. The equilibrium dew point curves for four hygroscopic solutions are presented herewith in graphical form. For comparative purposes the following tabulation has been prepared from data that were taken from these curves. This tabulation represents the maximum dew point depression under equilibrium condition at the two indicated contact temperatures.

Solutions	Dew point depression at contact temperatures of 90°F.	and 40°F.
Lithium Chloride	67°F.	40 Approx.
Dow-8A (Calcium Bromide-Calcium Chloride)	64	29
Zinc Chloride	55	40 Approx.
Diethyleneglycol (96%)	51	45
Calcium Chloride 40%—Glycerine 20%	41	23
Glycerine (85%)	33	30
Calcium Chloride (40%)	31	23

*Texoma Gas Co., Fritch, Texas.

In order to illustrate the effect of pressure on the residual water vapor content, assume that equilibrium conditions have been established between the gas and a 40% solution of calcium chloride at a temperature of 90° F. From the above tabulation, we see that a dew point depression of 31° F. may be obtained, i.e., the equilibrium dew point will be 90 − 31 = 59° F. If the total pressure on this system is 200 lbs. per sq. in. the residual water vapor content of the treated gas will be 61.5 lbs. per million cu. ft.; at 500 lbs. per sq. in. the water vapor content will be 26.3 lbs. per million cu. ft. and at 800 lbs. per sq. in. it will be 17.3 lbs. per million cu. ft. These examples clearly show that a dehumidification plant is much more effective in stripping a gas of its water vapor, when it is placed on the discharge side of a compressor station rather than on the lower pressure intake side, temperature conditions being the same.

Commonly Used Hygroscopic Solutions

Of the various types of hygroscopic solutions that were mentioned above, calcium chloride brine and diethylene glycol solutions have been used most frequently on high pressure natural gas systems. The chief advantage of calcium chloride as compared with diethylene glycol appears to be in the lower cost of the former material. The annual solution make up requirement at three calcium chloride dehumidification plants ranged from 0.1 to 0.2 lbs. $CaCl_2$ per million cu. ft. of treated gas. An aqueous solution of calcium chloride is a good electrolyte and care must be used in the selection of equipment in order to prevent electrolytic corrosion between dissimilar metals. The results of practical operation show that concentrated solutions of calcium chloride at atmospheric or lower temperatures are not corrosive in an atmosphere of natural gas unless the pH of the brine solution falls to 4.2 or less. The amount of dissolved iron in the system brine may be indicative of the corrosiveness of the solution as shown by the following analyses:

	Dissolved Iron P. P. M. in 30% $CaCl_2$	pH
Plant No. 1	62	4.7
Plant No. 2	355	4.4
Plant No. 3	1,111	4.2

Some active corrosion has been observed in the contacting tower at plant No. 3 but no appreciable corrosion has been found at plants 1 and 2. Calcium chloride brine has been in continuous use at plant No. 1 since August 1933. The only point in the system where active corrosion has been observed is in the high temperature evaporating tank. Shively[9] reports that the average life of a cast iron evaporator is about five years. The life of a steel evaporator is probably about two years.

Accumulations of oil such as absorption oil that may collect in the system during normal operation of a dehumidification plant should be withdrawn separately from the hygroscopic solution in order to prevent the formation of permanent emulsions that will occur if the two solutions are drained simultaneously from a high pressure system and vented to atmospheric pressure.

The magnitude of the dew point depression in a calcium chloride brine system at any fixed temperature is limited by the solubility of the calcium chloride at that temperature. It is necessary to operate with brine concentrations that are well below the crystallization point in order to prevent plugging of the solution lines. However, an inspection of the calcium chloride equilibrium dew point chart will show that sufficient dew point depression can be obtained from most commercial operations providing that the contact temperature is low enough.

Glycerine Helps $CaCl_2$

Low contact temperatures usually require the installation of refrigeration equipment which will materially increase the cost of a dehumidification plant. It may therefore be more economical to select a hygroscopic material that is capable of producing lower dew points than calcium chloride brine. A mixture containing 40% calcium chloride, 20% glycerine and 40% water has been used for this purpose in at least two commercial plants.

The equilibrium dew point of this mixture is approxi-

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REFINING TECHNOLOGY

May 15, 1940

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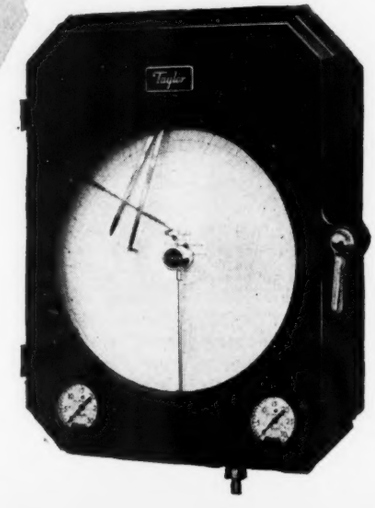

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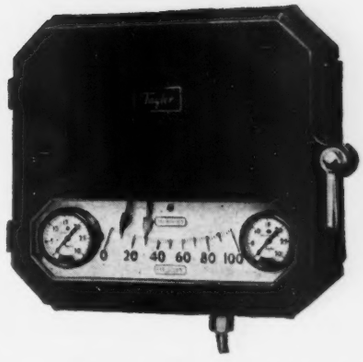

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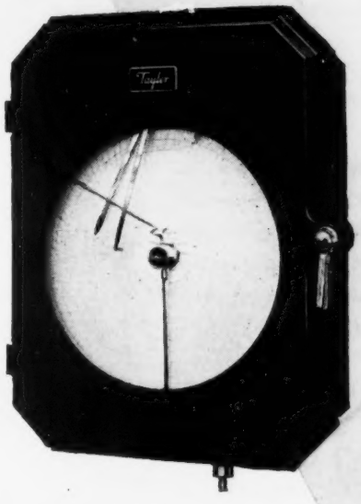

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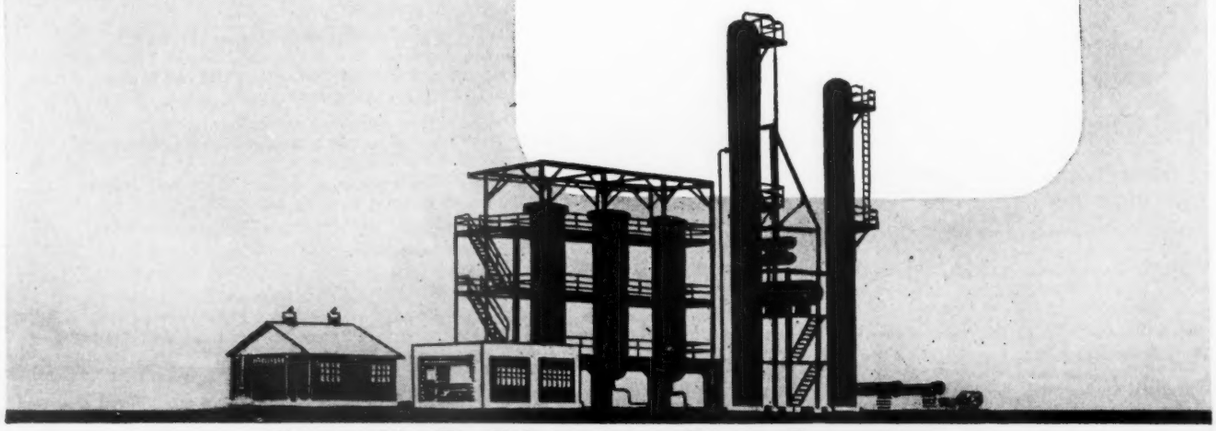

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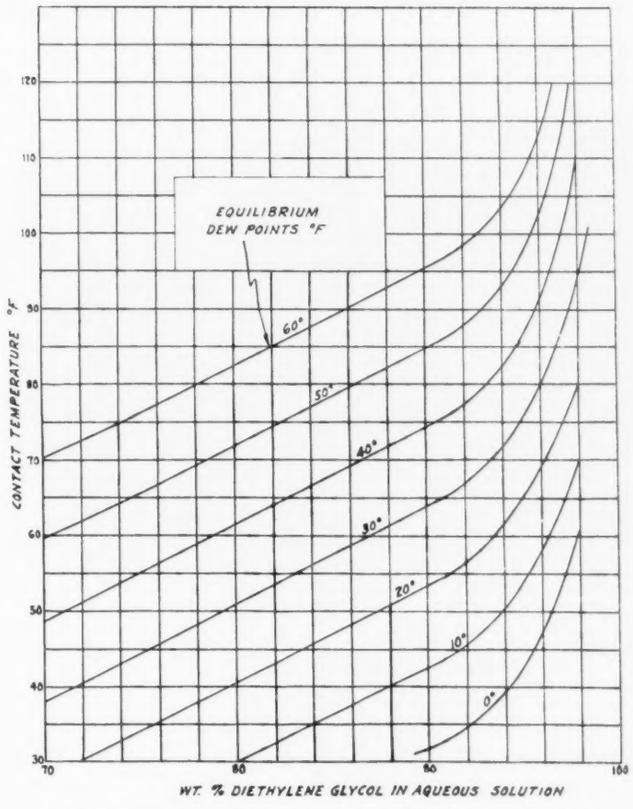


Equilibrium dew point curves for diethylene glycol in aqueous solution

mately equivalent to a saturated solution of calcium chloride. The addition of glycerine to supersaturated calcium chloride solutions is said to interfere with the crystallization of the calcium chloride in such a manner that it is precipitated in a finely divided form so that the resulting mixture is readily maintained in suspension in the solution[6]. The solution make-up requirement at one of these plants is about .02 to .06 gallons per million cu. ft. where the plant throughput is 100 to 130 million cu. ft. per day and the contactor pressure is about 200 psi. Baker and Partridge[1] report that operating troubles of a glycerine chloride plant have been negligible except when small amounts of hydrogen sulfide were present in the gas. The hydrogen sulfide was believed to have formed iron sulfide which acted on mineral seal oil that was present in small amounts and resulted in foaming of the solution.

17 Plants Use Diethylene Glycol

Diethylene glycol was introduced as a commercial dehumidifying agent in 1936 and at least 17 plants of this type are now in operation. Diethylene glycol is an organic liquid that solidifies at 14° F. A 95% aqueous solution solidifies at about −40° F. The aqueous solution can therefore be used in practically all commercial operations without the danger of solidification that is present in the case of concentrated calcium chloride solutions. The dew point lowering at any given temperature is greater than could be attained with any practical concentration of calcium chloride brine or with the 40% calcium chloride—20% glycerine mixture. Operating difficulties of this type of plant are also reported to be nil. Baker and Partridge[1] reported that diethylene glycol absorbs some condensable hydrocarbons, e.g. 25 gallons per day of heavy gasoline was condensed with the water from the still outlet vapors, in a plant that was designed to treat 50 million standard cu. ft. per day at 300 to 425 psi. operating pressure. Laboratory tests showed no absorption of gasoline at 80° F. and 750 psi. when contacted with a dry gas which contained 0.300 gallons per 1000 cu. ft. The solubility of the gas at the same temperature and pressure was found to be .345 cu. ft. per pound of diethyleneglycol[13].

Diethylene glycol and the ethanolamines appear to be mutually beneficial in a combination dehumidification and desulfurization plant, i.e. the glycol solution reduces the foaming tendency of the amine solution and the amine aids in the reduction of the dew point of the gas. The results of two seasons of operation of a combination plant of this type show that the solution makeup requirement amounted to about 0.1 gallon per million cu. ft. of gas.

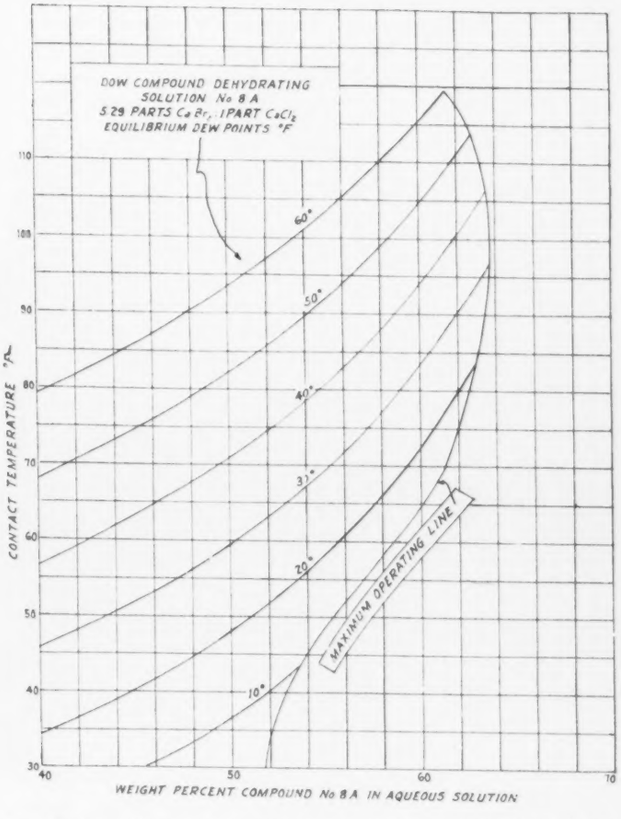
Aqueous glycerine solutions have been used successfully for removing water vapor from gases although special precautions are necessary to prevent decomposition of the glycerine when removing the absorbed water from the diluted solution. This may be accomplished by vacuum distillation or by contacting the glycerine with an inert gas in the same manner that stripping steam is used in an absorption oil still. Smith[10] states that if the glycerine concentration is much greater than 85%, the glycerine is too viscous and tends to cause foaming troubles.

Compound solution No. 8A which has recently been placed on the market by Dow Chemical Co. is said to have remarkable dehumidification properties. This solution is a mixture of calcium bromide and calcium chloride in the proportion 5.3 parts calcium bromide to one part calcium chloride.

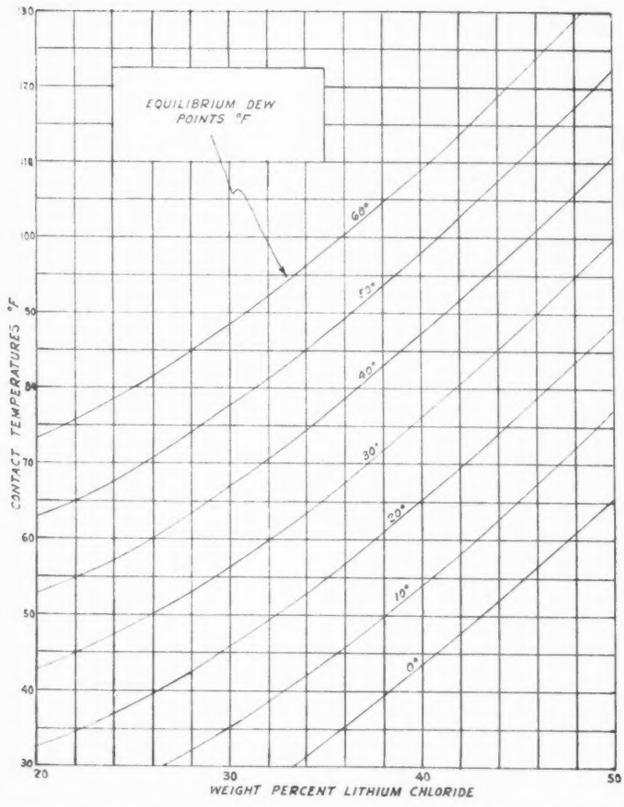
Solutions of zinc chloride also have remarkable dehumidification properties although the probability of acid corrosion has prevented its practical application up to the present time.

Lithium Chloride Has Several Advantages

Lithium chloride solutions have been used for some air conditioning problems but it has not yet been used in a large scale gas dehumidification plant. Bichowsky[2] considers that lithium chloride is a superior dehumidifying agent for the following reasons; it is one of the most hygroscopic of all inorganic compounds; it has a greater drying rate than calcium chloride; it is non-toxic; it has a low



Equilibrium dew point curves for calcium bromide-calcium chloride in aqueous solution



Equilibrium dew point curves for lithium chloride solution

freezing point and the material which separates out of a concentrated solution is either di or mono-hydrate which allows enough liquid to remain to prevent solidification; a concentrated solution will not become entirely solid until it has been cooled below −60° F.; corrosion with lithium chloride is considered to be less than with calcium chloride but no data are given to support this claim; boiling of lithium chloride does not hydrolyze the salt.

A typical example of the flow cycle of a liquid absorption dehumidification plant is as follows: Wet gas is delivered through a liquid separating chamber to the bottom of one or more contacting vessels where it passes upward through the contacting trays. Fresh solution is pumped through a liquid to liquid heat exchanger and thence to a water cooler and into the top tray of the contacting vessel. It flows from the base of the contactor to a surge tank, back through the liquid to liquid heat exchanger, thence through a steam preheater and into the feed plate of a stripping still. The solution is heated by means of steam coils in a reboiler. When glycerine is used, the steam heat is supplemented by allowing a stream of natural gas to pass through the heated solution and thus lower the reboiler temperature. This prevents decomposition of the glycerine. The water in the heated solution is vaporized and passes upward through the trays of the still where it is stripped of all hygroscopic material and is finally vented from the top of the still. The hot solution in the reboiler is then returned to the heat exchanger and the above cycle is repeated.

Solid Absorbents:

Solid calcium chloride is sometimes used for the partial dehydration of gas at individual wells in the field. The Solvay Co.[11] have described a practical method of application wherein it is recommended that the contactor be filled with calcium chloride lumps which are 1 to 2 inches in diameter. Granular or flake calcium chloride is not recommended because of the tendency of the grains to weld together under the effects of water vapor and thus cause channeling or even complete stoppage of the gas flow. The outlet gas will be in hygrometric equilibrium with the saturated solution of calcium chloride at the temperature prevailing at the top of the chloride bed.

Lump Potassium hydroxide, applied in approximately the same manner as lump $CaCl_2$, has proved very successful in the removal of moisture from liquified petroleum gases that are subjected to extremely low temperatures. Solid potassium hydroxide is more efficient than solid calcium chloride.

Solid Adsorbents Make Economical Plant

Solid drying agents that depend upon a physical attraction between the adsorbent and the condensate, may be used for practically complete removal of water vapor. Shively[9] considers that the inherent advantages of solid adsorbent agents are great enough to warrant a considerable application of this type of material, e.g. the relatively small quantity of adsorbent required for the treatment of high pressure natural gas makes possible an economical design of a dehydration plant. Where complete dehydration is not required, some wet gas may be permitted to by-pass the dehydrator and thus increase the capacity of the unit. In designing a plant of this type, means should be provided for the removal of lubricating oil or absorption oil from the gas before entering the dehydrator vessel since it appears likely that oil will impair the efficiency of the adsorbent agent.

Raay[8] has described the operation of a silica gel adsorbent plant that has been in successful commercial operation in Venezuela for several years. This plant operates at a pressure of 353 psi. and treats 8828 MCF per day. This plant consists of three contacting vessels or adsorbers and one heater. The operating cycle consists of the adsorbing period, the heating period and the cooling period. Wet gas enters the top of the first contacting vessel and leaves it at the bottom. When the adsorbent material has become saturated, the wet gas stream is switched to the second contactor. Hot gas (329° F.) from the heater then enters the bottom of the first contactor and leaves it at the top. After all of the water vapor has been removed, a stream of cooled dry gas is passed through the adsorbent bed until normal operating temperatures are obtained. The entire cycle is carried out under full operating pressure.

Other adsorbent agents that are now in commercial operation are, activated alumina, anhydrous calcium sulfate (drierite)[7] and florite which is said to be a native bauxite impregnated with manganous chloride.

The comparative efficiencies of some of the above mentioned solid adsorbent and absorbent materials are shown in the following table which was prepared from the data of Bower:

	Residual water vapor in the treated gas lbs. per million cu. ft.
Calcium chloride	78.04
Silica gel	1.87
Potassium hydroxide	0.87
Aluminum trioxide	0.31
Calcium sulfate, anhydrous	0.31

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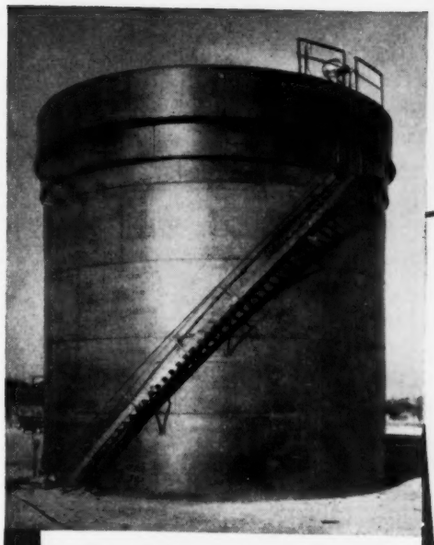

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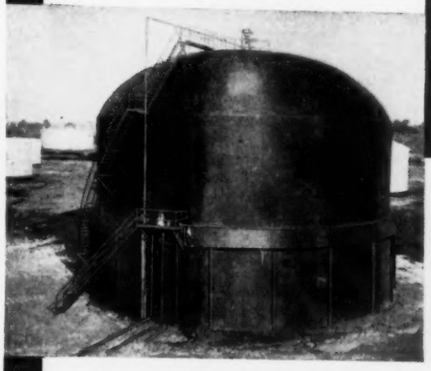

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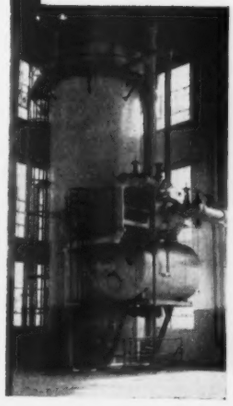

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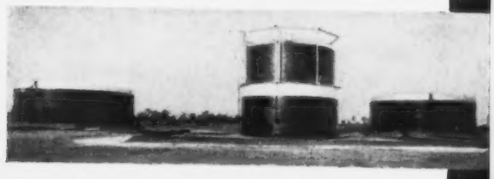

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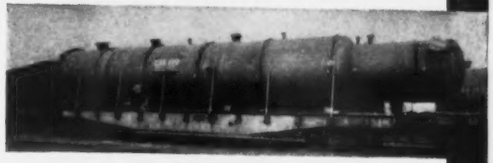

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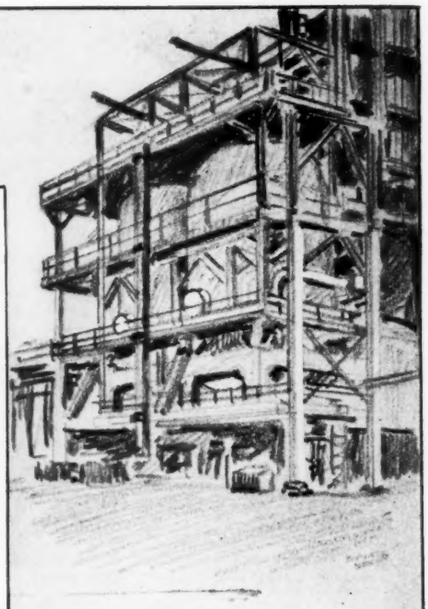

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GRAY CLAY TREATING

Efficiency of "Gas Recycling" Speeds Plant Construction Plans

By E. E. DeBack*

ABSTRACT

Production of distillate from true gas phase structures by "recycling" is becoming of increasing importance. The first major recycling plant, put in operation a year and a half ago was followed last December by a second and a third is to start operations in July, while several other plants are contemplated operating at pressures up to 6000 pounds.

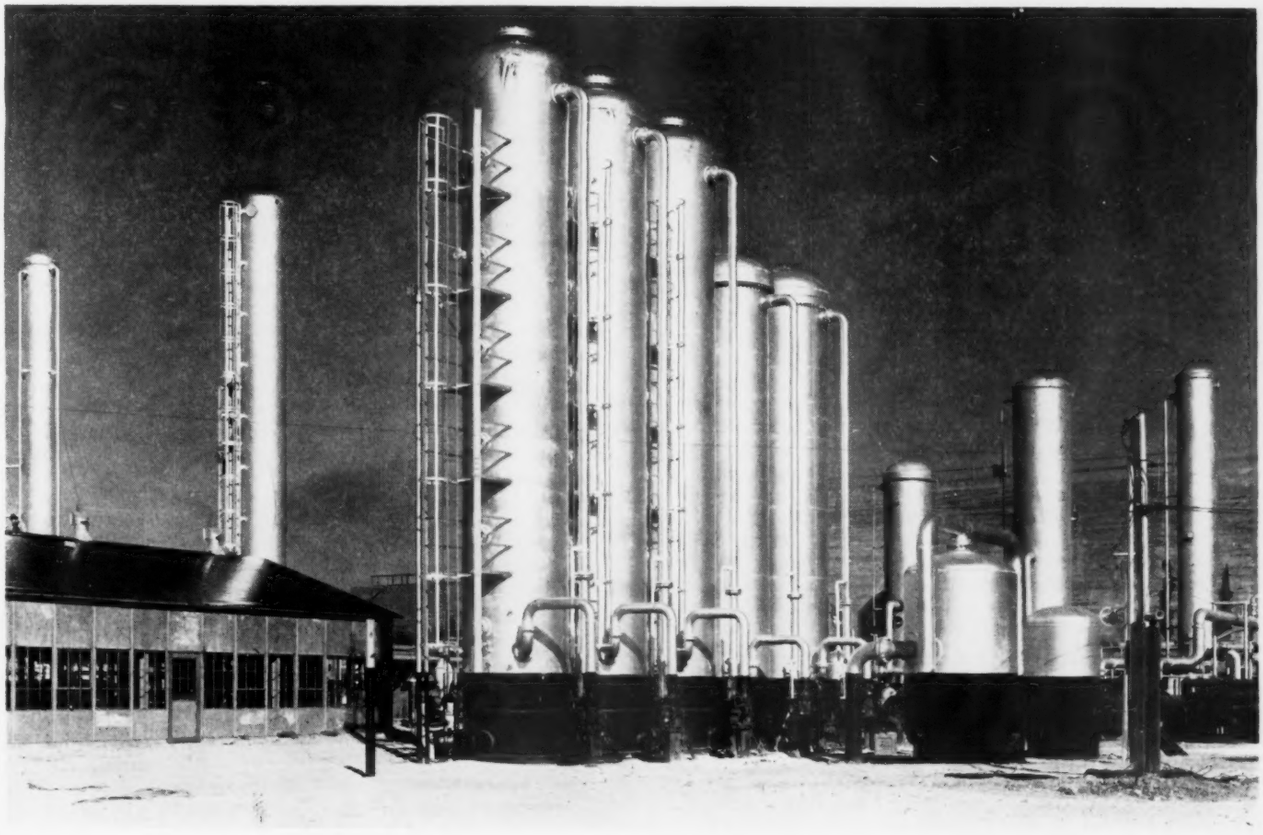
High efficiency has been obtained in plant operation. An unusual feature of the distillation equipment of one of the operating plants is the preheater which heats the oil to 580°F. without noticeable cracking. Compressor packing leakage and compressor rod wear have been no greater than experienced under normal low compression conditions. It has been found that input wells should have the maximum possible sand thickness, permeability and exposed sand face to reduce the pressure necessary to return the dry gas to the formation. Location of wells requires extreme care.

Presented before the Natural Gasoline Association of America at its Nineteenth Annual convention, Tulsa, May 15-17.

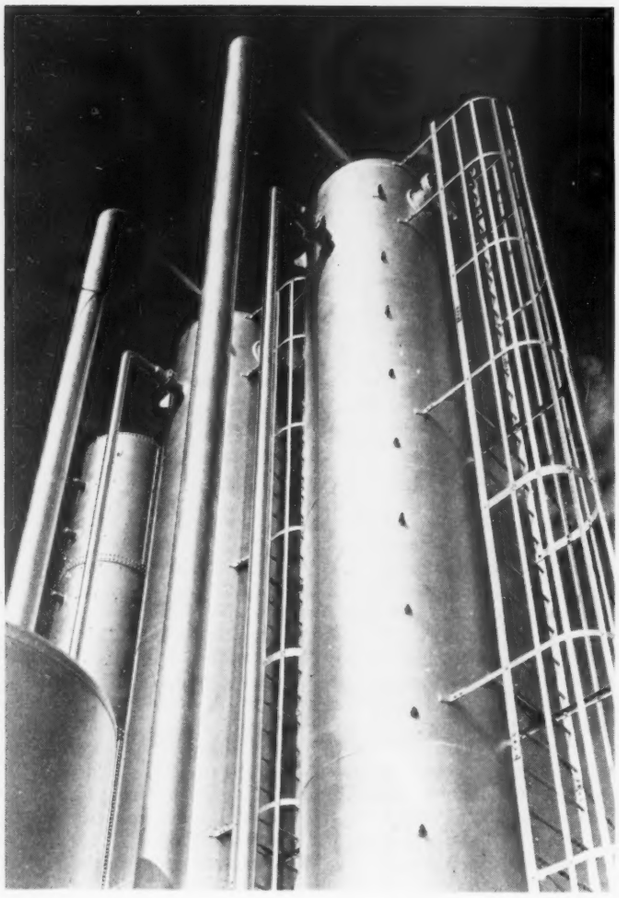
THE economic production of distillate from true gas phase structures by unusual extraction methods combined with pressure maintenance, as performed by the incorrectly termed "recycling plant" has now taken an important place in the oil industry.

The first major "recycling plant" was placed in operation in December, 1938, by The Corpus Christi Corp. on their own properties in the Stratton field, Nueces county, Texas. This plant is of the simplest possible design, utilizing cooling and expansion combined with brine injection to prevent the formation of hydrates to extract the distillate. The distillate produced is stabilized to conform with market conditions and the dry gas is returned to the formation from which it originated by single stage compression. Naturally enough, the power required to return the gas to the formation is of major consideration, and it is therefore imperative that the compressor suction pres-

*The Corpus Christi Corp.



The largest high-pressure absorbers in the world are shown in the center foreground of the Shamrock McKee natural gasoline unit



Note the symmetry of line of these absorbers in Carter Oil Co.'s Fitts Pool gasoline plant. The "cages" around the ladders are typical of refinery and gasoline plant construction to promote safety to workmen

sure be maintained as high as possible. Inasmuch as fairly good extraction efficiencies could be realized at 1200 psi. and 30°F. by simple cooling and expansion and the horsepower requirements to compress the gas to the required 3050 psi. input pressure was not excessive, the economics of the program was established.

In December, 1939, the Coastal Recycling Corp. started their plant in the Agua Dulce field on a royalty agreement with the Union Production Co. This plant differs from the Corpus Christi Corp. plant only inasmuch as it operates on a high pressure absorption cycle instead of the retrograde condensation principle due to the fact that well pressures and the analysis of the gas were such that satisfactory extraction efficiencies could not be attained by cooling and expansion without involving excessive compressor horsepower. The absorbers are now operating at 1350 psi. gauge with a top future of 1500 psi.

The Gulf Plains Corp. anticipates the starting of its plant in the Sullivan and Stratton fields, Nueces county, Texas, about July of this year, and this plant will also be of the high pressure absorption design with the absorbers operating at 1500 psi. Several other operations are now contemplated involving absorption pressures up to 2000 psi. and compressor discharge pressures up to 6000 psi.

Comparison of Extraction Efficiency

It has been established that the direct separation refrigeration process when operating at 1200 psi. pressure and 30°F. on a wet gas containing one gallon of iso-pentane plus per 1000 cu. ft. of gas reflects an extraction efficiency of this fraction of about 85%. Under the same temperature and pressure conditions extraction efficiency becomes lower and lower as the percentage of heavy hydrocarbons is reduced.

An absorption plant operating at the same pressure (1200 psi. gauge) and under normal temperatures, as obtainable by water cooling of both gas and oil streams, realizes an iso-pentane plus fraction extraction efficiency of 96% to 98% when circulating approximately two gallons of absorption oil per 1000 cu. ft. of gas, the absorption oil being a 35 gravity 510 initial—620 endpoint product. Particular attention should be given to the selection of the absorption oil to be used in a high pressure plant. Its emulsion characteristics should be especially good and the conate water extracted from the gas in the absorber should be drawn off before the fat oil goes through the stage weatherers.

The process of stage weathering the fat oil from 1200 psi. or greater pressure down to the distillation unit pressure is deserving of close study. Normally, not less than three stages of venting are necessary to properly vent the lighter and undesired hydrocarbons from the oil so that excessive recompression or reabsorption of distillation unit non-condensables will not be necessary. Generously oversized vent tanks and vent tank piping have been found to be necessary as apparently the foaming of the fat oil when subjected to such pressure reductions as these causes unusual carry-over conditions in the vent tanks. The loss of absorption oil by carrying over from the absorbers has proven to be much less than that generally anticipated, and as a matter of fact, is nil when the absorbers are provided with efficient mist extractors above the top tray.

Distillation Equipment

Perhaps the most unusual feature of the Coastal Recycling Corp. distillation unit is the direct fired fat oil heaters, which preheat the oil entering the primary still to 580°F. without noticeable cracking. These heaters are designed to maintain uniform firebox temperatures in the order of 1300°F. throughout to insure against localized heat input and high skin temperatures. Relatively high oil velocities through the heaters also tend to reduce excessive temperature variations from the center of the tube to the tube itself.

The balance of the distillation unit consists of a primary still operating at 35 psi. pressure, the overhead product being endpoint specification motor fuel, a secondary still operating at 5 pounds pressure, producing a specification kerosene overhead, and a stabilizer unit controlling the vapor pressure of the motor fuel stream.

The distillation unit has shown that no unusual conditions are encountered in removing heavy distillate fractions from absorption oil with the exception that the temperatures involved are naturally higher than encountered in the usual natural gasoline plant distillation system. The quantity of stripping steam required in the primary still varies with both the still pressure, oil inlet temperature and the degree of fractionation required between motor fuel endpoint and kerosene initial.

Probably one of the most notable surprises to one only giving casual thought to the pressures involved, is the fact that compressor packing leakage and compressor rod wear are no greater than experienced under normal low compression conditions. This is due mainly to the design, materials used, and number of rings in the packing case and the system of lubrication; however, the quantity of lubricating oil required at this point is somewhat in excess of that required for low pressure conditions.

The compressor valves require only the normal attention and give little or no trouble providing all suction lines are thoroughly cleaned of all welding "tears" and the foreign material by swabbing and blowing to the air before passing gas through them to the compressor cylinders.

Another problem warranting careful design and consideration is the high pressure gas and oil piping so as to take care of expansion and still eliminate vibration. On the compressor main suction and discharge headers, a system of fixed central anchors, slip type intermediate anchors limiting the pipe to longitudinal movement only,

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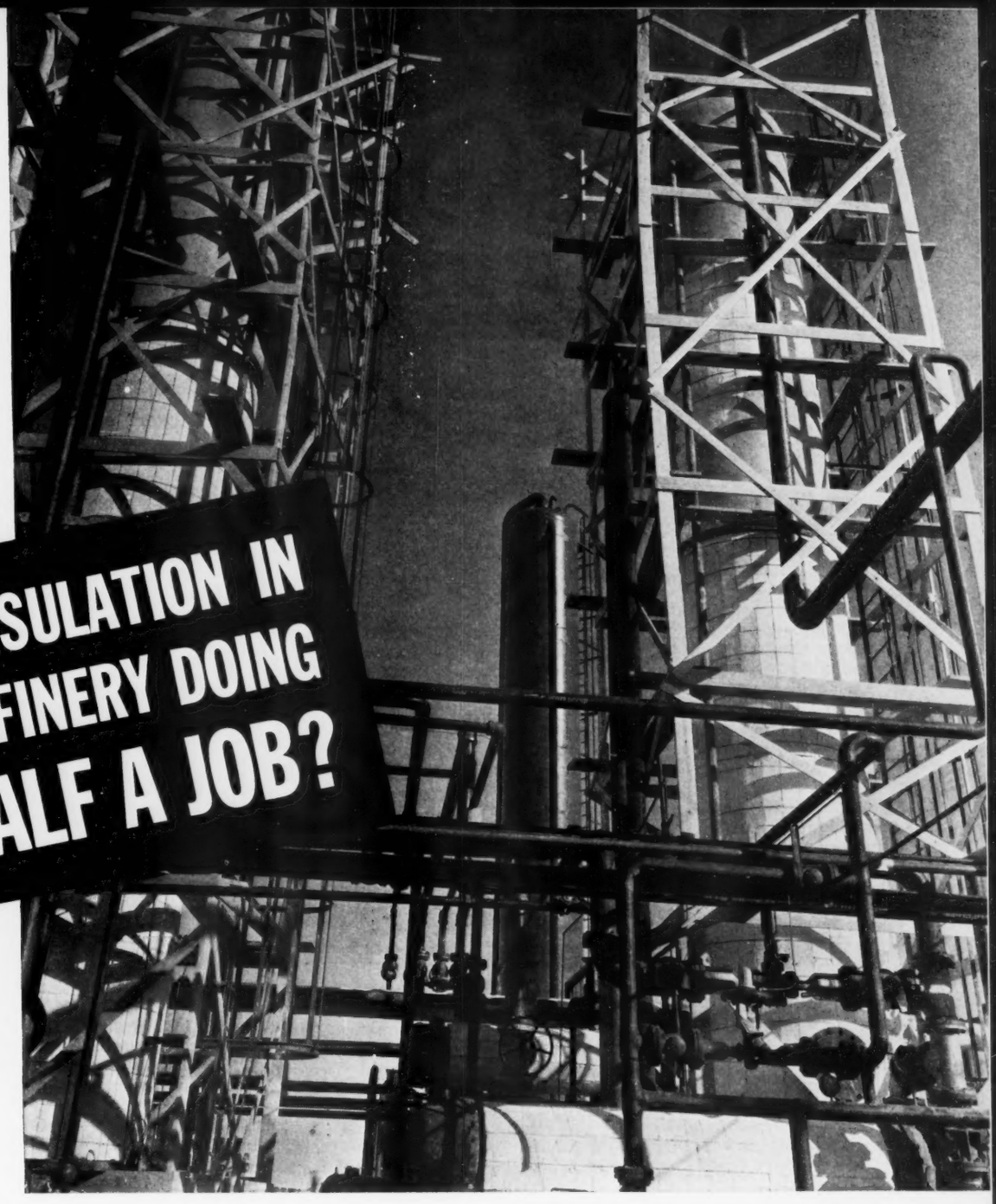

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and horizontal expansion loops have apparently answered this problem exceptionally well. All piping for services such as this should be located above ground for ready inspection and painting. Likewise, the individual compressor cylinder piping inside the compressor building should be in readily accessible trenches, and should be rigidly braced with thrust plates against the sidewalls and bottom of the pipe trench.

The field piping necessarily must be buried in farming areas, and due to the sudden temperature changes involved in starting up and shutting down, it has been generally assumed that line slack should not be depended on for expansion and contraction, but rather this condition should be taken care of by horizontal or vertical expansion bends. If horizontal bends are used, they should be located in concrete boxes to permit unrestricted movement.

Cooling System

Water conditions in the South Texas area are particularly bad from the standpoint of excessive sodium and calcium chloride content, and therefore all cooling systems are of the closed type and all exhaust steam is condensed. The engine jacket water system make-up is supplied by condensed steam, and therefore, the only water requiring serious treatment is the boiler feedwater make-up and cooling tower make-up. Pyrochrom glucosate and quachrome glucosates have been used with considerable success for these make-up water treatments.

The Corpus Christi Corp. uses a down draft type of cooling tower whereas both the Coastal Recycling Corp. and Gulf Plains Corp. use the induced draft type with the fans located on top of the tower, which expells the hot air vertically at considerable velocity, removing the hot humid air from the plant operating area and cooling tower.

With unusually bad water conditions prevailing, the economics of electrically driven pumping equipment versus steam favored the former, since it would have been necessary to run all equipment condensing to reduce the quantity of boiler make-up water to a minimum. This in turn, required an unusually large cooling tower and water circulating equipment. Again, when condensing steam in atmospheric sections in a cooling tower meant the evaporation of considerable quantities of cooling water and the deposition of serious quantities of scale on the condenser tubes, even though an expensive water treatment was used.

Electrically driven equipment having therefore been decided upon affected the selection of the type of cooling tower. The additional load on the electric generators to drive cooling tower fans being small compared to the total connected load, did not affect the generator installation and therefore, the induced draft cooling tower involved a less investment than the larger natural draft tower.

The flexibility of this type tower has proven of considerable worth in attaining uniform plant condensing and cooling operation, as the number of fans in operation are varied in accordance with the temperature conditions required.

Operation and Completion of Input Wells

Much has been said in regard to the location of the input wells on the structure. There are primarily two locations for these: (1) On the flank, and (2) On the top of the structure. Both schools of thought have their merits, however, the particular structure under consideration is really the deciding factor in this matter as the sand thickness and sand conditions such as porosity, permeability, uniformity, and edge water, etc. all vary in different structures and must be studied as individual cases.

In general, however, input wells should have the maximum possible sand thickness, permeability and exposed sand face to reduce the pressure necessary to return the dry gas to the formation. The completion of these wells for maximum gas return is also of prime importance, and by underreaming through the sand, by cementing above the pay only, and by using either very open screens or numerous shots has proven to be very beneficial in this respect.

Input wells and the formation around them from the top to the bottom of the hole attain considerable false temperature from the hot compressed gases and therefore should it be necessary to shut a plant down or shut in a particular input well, for any considerable time, it is important to pay close attention to the cooling off operation so as not to place too great a strain on the long string. This is especially so in the case where a fuel hole cement job has been used.

Too strong an emphasis cannot be placed on the necessity of a very careful study of the location of input with reference to producing wells, the individual well rates of withdrawals and the rates of return and the total rate of withdrawal and return for the entire project. Failure to do this will undoubtedly result in channeling, premature drying up of producing wells close to input wells, the necessity then of drilling additional wells to process "edge" gas that has been channeled past and in general, disappointing returns on the investment.

Accurate analytical and graphical records should be kept continuously of the position of the return dry gas in the formation. To do this, it is necessary to have complete geological information on the structure as it involves corrections for variations in porosity, permeability, uniformity, arial extent of the productive formation and pressure conditions. This coupled with a systematic system of testing the producing wells for dilution will enable the operator to balance the "take" and input rates so that he can forecast and correct these rates to the end that the entire structure will produce the maximum percentage of the original reserves.

Longest Solvent Extraction Column Used in Lubricating Oil Analysis

"A differential solvent extraction column, probably the longest and most efficient unit of the kind built so far" is being used by Dr. W. A. Gruse, senior fellow in the multiple fellowship of the Gulf Research and Development Co. at Mellon Institute, in a "thoroughgoing fundamental study of the constitution of certain lubricating oils," it was reported in the recently published annual report of E. R. Weidlein, director of the institute.

Dr. Gruse has also been examining petroleum oils by micromethods. "During the past year the technique for the measurement of viscosities in the range of a few centipoises to 10,000 centipoises, with samples of the order of 0.01 cc., was rounded out and a description of the apparatus published.

"A report was also released on a new apparatus for determining molecular weights of oils more accurately than by the customary boiling-point methods and much more conveniently than the freezing-point methods. A microtechnique for the determination of aniline points (50% solubility temperatures) was found and considerable progress was accomplished on a similar procedure for acidity titrations in which 1-drop samples of oils are examined."

"The prototype engine testing work, aimed at a better knowledge of combustion engine deposits, has been conducted actively. The mechanism of varnish formation was studied with care and the parts played by lubricating oil oxidation and by engine fuel were evaluated; also the significance of engine temperature and the conditions of service were examined. The conclusions from this study have been released because of the interest of the automobile industry.

"A basic study of the chemical causes of piston ring sticking, particularly of the type encountered in aviation engines, has also been conducted. During the year it was possible to establish clearly some of the fundamentals of the phenomenon known as oil-ring clogging and to point out its meaning in connection with engine oil consumption."

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Cracking	From 71 or	86 to	79 or	95
Reforming	From 65 or	71 to	79 or	92

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Recycling Keeps Natural Gasoline Industry on Conservation Front

● "The natural gasoline industry is now confronted with a new problem in which its experience and background will place it in the fore-front in the development of ways and means and methods directed toward conservation," it was brought out by H. B. Bernard, Tulsa consultant, at the Nineteenth annual meeting of the Natural Gasoline Association of America, May 16.

"This new problem is recycling. Recycling involves the technique in producing and processing liquid petroleum products from sub-surface formations when these products are in place normally in the vapor phase. Recycling has been brought about through the discovery of the physical phenomenon now generally referred to as retrograde condensation.

"Whereas under formerly recognized physical laws, hydrocarbons below critical temperatures condensed under progressively higher pressures, a number of experimenters including Lacy, Katz, Sage, Hachmuth, and others have discovered that under further increased pressures these petroleum hydrocarbons return to the vapor state, and it is in this state that hydrocarbons in the petroleum range that are normally liquid, occur in place in oil producing horizons.

"Oil producing horizons of this description, known as distillate structures or those producing what has commonly been referred to as wet gas, require an entirely new operating technique. Recycling involves the maintenance in the producing horizons of pressures high enough to prevent therein condensation of the heavier hydrocarbon fractions. If the reservoir pressure is permitted to fall below a certain point, the dew point of the hydrocarbon mixture in the sand will be reached and condensation will begin, and the products in liquid form will not be recoverable unless special procedure is resorted to.

"The maintenance of pressure in the oil producing horizons and the processes and methods employed for the extraction of the petroleum hydrocarbons, and their further treatment and handling after extraction and recovery seem to be very closely allied to operating practices ordinarily employed in the natural gasoline industry.

"The compression of gases at high pressures present problems both of design and operation that have not been entirely solved, and certainly the end process—that is the final one that may be utilized for extracting the liquid hydrocarbons from the high pressure gas to the economic limit—is yet in the realm of speculation. These problems have been approached in the laboratory, but field experience is lacking. A personnel must be developed that will be equipped to investigate and solve these new unknowns. These distillate fields or structures cannot in practice or legally be produced with complete conservation in mind unless recycling operations are resorted to, and in these operations the natural gasoline industry must play an essential role."

Many of the contributions of the natural gasoline industry have been in the cause of conservation, directly or indirectly, Mr. Bernard said. The gasoline plant has been a material factor in systematizing and simplifying lease operations through regulated production of gas from oil wells and controlled return of fuel gas.

Among conservation applications of gasoline plants, Bernard named the gas lift involving residual gas under pressure as its source of energy. He said gas lift seems an obvious but not too commonly practiced method of conserving power. It is frequently economic only when the original pressure or lifting energy exists by virtue of a gasoline plant. While petroleum engineers have directed increasing attention to gas repressuring in oil production, it is believed not to have received the serious and general attention it deserves. It is not beyond expectation that a partly depleted field will produce as much oil under a properly organized repressure program as has already been produced by ordinary methods, Bernard said. In such an operation a gasoline plant is the best instrument of conservation, as it will already have available at least part of the energy required for the program.

Probably the more immediate interest in conserving gas pressure energy is in connection with pressure maintenance programs, excluding the above-mentioned recycling operations or those operations in which the material to be produced in the reservoir is entirely in the vapor phase. Such a program, properly executed will double the total oil recovery in comparison with that obtained by more archaic methods of production, Bernard said.

Natural Gasoline Assn. Head Started Career as a Teacher

● George P. Bunn, whose photograph appears on the cover of this week's issue, is presiding this week as president of the Natural Gasoline Association of America's convention in Tulsa. He was elected president at the annual convention in Tulsa in May, 1939.

Mr. Bunn is manager of the natural gas and gasoline department of the Phillips Petroleum Co., with headquarters in Bartlesville, Okla. In addition to having supervision over the company's 36 natural gasoline plants in Texas, New Mexico and Oklahoma, he also is in charge of the sales and purchases of gas.

Born in Jackson county, Ohio, Mr. Bunn obtained his common school education at Wellston, O. He went to high school at Humboldt, Kans., after which he enrolled in the engineering college at the University of Kansas.

During vacations in 1913 and 1914 he worked for the Public Service Co., in Tulsa, as operator and draftsman. In 1916 he married, withdrew from school and obtained a position as principal of the high school at Potter, Kan.

After three years of school teaching he returned to Kansas university to complete his work for a degree. During vacations he worked at the drafting board for Cosden & Co. at its West Tulsa refinery. During the school terms he taught descriptive geometry in the university's school of engineering. He received his B.S. degree in mechanical engineering in 1920.

Returning to Tulsa, Mr. Bunn became an engineer for Frank P. Peterson, pioneer in design and operation of natural gasoline plants, whose firm was succeeded by the former Foster & Gilmore Co.

Business became a little slack in the natural gasoline plant field in 1921 and Mr. Bunn, already an experienced teacher, joined the staff of the Tulsa Central high school, as junior class coach and teacher of physics and geometry.

F. E. Rice, who had spent some of his younger days in and around Tulsa and who had become manager of the Phillips natural gasoline and engineering department, knew the caliber of Mr. Bunn's work. He persuaded him to leave his Tulsa high school position at the end of the first term to become his assistant at the Bartlesville headquarters.

When the engineering department was made a separate division, Mr. Bunn was made manager of the natural gas and gasoline department.

Prior to his election as president of the N. G. A. A., Mr. Bunn had served on several committees of that organization. At the present time he is chairman of the American Petroleum Institute's sub-committee on measuring, sampling and testing natural gas; member of that organization's central committee on measuring, sampling and testing natural gas and natural gasoline, and chairman of the American Gas Assn.'s gas testing committee.

He is a member of the Mid-Continent Oil & Gas Assn.'s committee on dry gas contracts, as well as a member of the executive board of the Oklahoma gas measurement short course held each year at the University of Oklahoma at Norman.

Other affiliations are Tau Beta Pi, Bartlesville Engineers club, University of Kansas Alumni Assn., Frank Phillips Men's club, Independent Petroleum Assn. of America, Oklahoma Society of Professional Engineers, and the Presbyterian church.

Aviation Fuel Volatility Question Up Again at S.A.E. Summer Meeting

Further attention to reduction of the fuel volatility of aviation fuel will be given by the Society of Automotive Engineers at its Thirty-fifth Anniversary summer meeting June 9-14 at White Sulphur Springs, W. Va. Dr. D. P. Barnard, Standard Oil Co. of Ind., and R. B. Cragin, M. W. Kellogg Co., are co-authors of a paper on "Reducing Aviation Engine Fuel Volatility" in the Fuels and Lubricants session Thursday evening June 13.

R. C. Alden, Phillips Petroleum Co., will speak on "Some Economic Aspects of Aviation Fuel Volatility." S. A. E. members will also listen to a paper during this session on "The Effectiveness of the Burning Process in Non-Knocking Engine Explosions," by Lloyd Withrow and Walter Cornelius, General Motors Corp.

On the following morning another fuels and lubricants session will include a paper by A. O. Willey and C. F. Prutton, Lubri-Zol Corp. consultants, on "The Use of Small-Scale Single-Cylinder Engines for the Evaluation of Motor Oils." C. M. Larson, Sinclair Refining Co., will conclude the session and the summer meeting by speaking on "Severe Duty Engine Condition as Related to Oil and Fuel."

Among other papers of interest to oil technologists are "Improvements in Gasoline" by W. H. Hubner, Ethyl Gasoline Corp., to be presented June 10, and Austin M. Wolf, automotive consultant, will discuss "Increased Power per Unit Gross Weight." "The Problem of Valve-Head and Valve-Stem Deposits" will be discussed by A. T. Colwell, Thompson Products Co., the following morning during an Aircraft Engine session.

Two Diesel Engine sessions are scheduled. During the first, on June 12, C. G. A. Rosen, Caterpillar Tractor Co., will give a "Full Scale Engine C. F. R. Progress Report." One of the subjects on the second session the following morning is the "Load Carrying Capacity Phenomena of Bearing Surfaces," by Macy O. Teetor, Perfect Circle Co.

Consultants in Recycling

E. O. Buck and A. S. Parks, consulting engineers and geologists, have organized Gas Laboratories, Inc., with offices in the Commerce Building, Houston. Dr. Judson S. Swearingen, research chemist at the University of Texas, is also associated with the new firm in an advisory capacity. Specific problems of recycling, such as physical tests of gas, plant design, development and production programs are included in the services offered by the new company.

Push Development of Wear Test Machine for Additive Oils

A preliminary program of comparative wear tests among the several types of wear-test machines that are in common use was voted recently by the sub-committee on development of a standard wear-test machine of the Society of Automotive Engineers Crankcase Oil Oiliness Research committee. The results of these tests will determine whether it is necessary to develop an entirely new machine or whether one of the already designed machines can be made a standard for comparative purposes.

The program laid out by the committee called for the preparation of identical samples of three unidentified lubricating oils by the S.A.E. for distribution to participants in the co-operative tests. By May 6 there had been 19 sets of samples shipped by the society. It is expected that an analysis will be made of all the results obtained and a report prepared before a meeting of the committee is called to discuss the results.

In addition to the wear test machines which have come into use in oil company laboratories and by automotive and bearing engineers Dr. O. C. Bridgeman, chairman of the committee, announced to the committee that the National Bureau of Standards had developed "a multiple-unit, reciprocating wear tester which permits both reproducible and controllable wear, and which is sufficiently sensitive to permit a reasonably accurate evaluation of the effectiveness of compounding agents (4 to 1 spread between mineral oil and a good additive)." Details of the machine's construction were to be sent to committee members. Those who attended the Aircraft meeting of the S.A.E. in Washington recently and made the tour of inspection of the Bureau, had the opportunity of examining the machine.

Petroleum Chemistry Conference To Meet at Gibson Island

A conference devoted to "Frontiers in Petroleum Chemistry" is scheduled the week of June 17 at Gibson Island near Baltimore under the auspices of Section C of the American Association for the Advancement of Science. C. R. Wagner, The Pure Oil Co., Chicago, is chairman of the conference. The program has been arranged as follows:

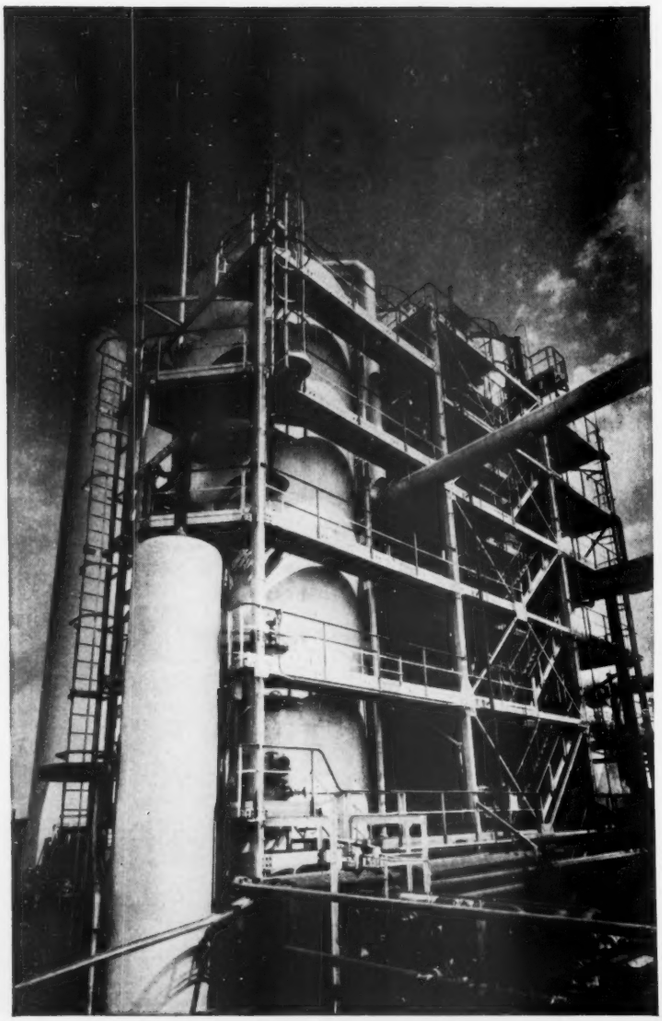
Date	Speaker	Subject
June 17.	Frederick D. Rossini	Analysis of Petroleum as Exemplified by Project 6 at the Bureau of Standards
June 18.	Gustav Egloff	Production of Aromatic Hydrocarbons from Petroleum
June 19.	E. V. Murphree	Alkylation
	C. W. Montgomery	Isomerization
June 20.	L. L. Davis	Oxidation of Lubricating Fractions
June 21.	T. A. Boyd	Investigation of Combustion Characteristics of Pure Hydrocarbons

The following week will be taken up by a conference on "Catalysis" and the third week's conference will be on "Organic High Molecular Weight Type Compounds." Three additional weeks of conference will cover other phases of chemistry.

A conference on Friction and Surface Finish will be held June 5 to 7 at Massachusetts Institute of Technology as a part of a summer program of technical conferences. Problems concerning boundary lubrication will be studied by physicists, chemists, metallurgists, oil technologists, and designing and producing engineers.

Dr. Jerome C. Hunsaker, head of the Department of Mechanical Engineering, will be in charge. Associated with him will be Dr. Robert S. Williams and Dr. John Wulf of the Department of Metallurgy and Prof. J. M. Lessells of the Department of Mechanical Engineering.

MODERN PYROLYTIC CRACKING PRODUCES QUALITY PRODUCTS WITH LOW PROCESSING COSTS



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Gasoline Treating Patents Issued One Weekly in 1939

DURING 1939 and 1940 to date there have been issued about one patent per week on treating methods for gasoline or light distillate. These have been divided largely between two classifications: sweetening or desulfurization, and stabilization or removal of gum forming and color bodies. In addition to these objectives in treating processes there is also a third class of processes aimed at the improvement of anti-knock quality of gasoline. In some of the patents that are included in the following summarization of treating patents, however, claims are made that the treating process improves both sulfur content and stabilization. A few include anti-knock improvement with sweetening and gum improvement. Where more than one type of improvement has been indicated the patent is briefed under the head of the principal or first-named improvement in the patent disclosure and the other improvements indicated.

After each brief of patent claims, the abbreviated name of the company to which the patent is assigned is indicated or, if no assignment is made, the name of the inventor. If these fail to suggest the full name, reference to the table of patents in numerical order at the close of the article will show ownership of the patent.

In the case of the Shell and Phillips patents which are more numerous than those of other companies, all have been briefed under sweetening patents, since they are largely of this type, and under the company name.

SWEETENING PATENTS

2,146,027 Regenerating doctor solution. Solution, together with lead sulfide, is contacted with oxygen-containing gas while under vigorous agitation. A large quantity of foam is produced which breaks in a zone of larger capacity allowing lead sulfide to settle. (S O Dev)

2,150,149 An aqueous alkali solution of sodium polysulfides is circulated in a closed circuit comprising a series of mixing zones, while contacting distillate at one part for reaction on mercaptan compounds. The altered aqueous solution is separated and elemental sulfur applied to it. (Sohio)

2,154,988 Oil-soluble heavy metallic soap of oleic acid is dissolved in a volatile organic solvent which will disperse homogeneously in cracked oil. The solution thus obtained is poured slowly into cracked oil to react with mercaptans and precipitate them by double decomposition as insoluble metallic salts. After separating the precipitate the remaining liquor is distilled to separate the organic solvent. (Jap)

2,155,007 Desulfurization, gum and color improvement. Sulfur compounds are polymerized in oils by flowing a stream of oil cooled to 0-40° F. through a series of towers containing contact material while sulfuric acid sludge flows downward countercurrently. Provision is made for holding temperatures constant. (Tidewater)

2,157,223 Sufficient aqueous doctor reagent is added to sour oils containing free sulfur to react with the mercaptans and sufficient water-soluble, oil-insoluble soap is added to the mixture to cause a rapid break between the oil and reaction products, sufficient sulfur being present to initiate the "break". (Pure)

2,162,670 An aqueous caustic soda solution is circulated in

Apparatus for sulfur determination of light oils at the Port Arthur refinery of Gulf Oil Corp.

a closed circuit. At one portion of the circuit a light hydrocarbon distillate is washed by it so that mercaptans are removed countercurrently in several stages. In the same circuit the mixture is contacted with lead catalytic surfaces. After separation of the distillate the solution of caustic soda is contacted with an organic solution of elemental sulfur in the presence of the lead surfaces. (Sohio)

2,164,665 Naphthas containing mercaptans but no hydrogen sulfide are contacted with aqueous caustic solution in a series of treating zones. Caustic solution is circulated from last to first zone, portions being removed to be revivified and introduced into the last zone. (S. O. Ind.)

2,170,336 Desulfurization, gum and corrosion improvement. Cracked distillate is subjected in vaporous condition to the action of sulfuric acid containing a monocarboxy organic acid of relatively low volatility such as acetic acid or one of its homologs, at less than atmospheric pressure. (U. O. P.)

2,174,510 Vapors and excess hydrogen are contacted in a series of stages with a solid sulfur sensitive catalytic surface containing a catalytic metal whose precipitated sulfide is black (nickel or an oxide of nickel), at a series of temperatures up to the cracking temperature. Pressures from one to 100 atmospheres are applied. (Gwynn)

2,176,196 Vapors are scrubbed with an alkaline solution to form an alkaline sulfur compound solution and substantially sulfur-free vapor, then treating the vapor with sulfuric acid so as to form sulfur dioxide which is scrubbed out with the alkaline sulfur compound solution from the initial operation to form hydrogen sulfide and an alkaline sulfur compound solution. (Std. Alc.)

2,177,343 Liquid distillate is contacted with magnesium oxide in nascent form at above 300° F. (Sohio)

2,183,782 Distillate is vaporized and contacted with a porous oxide of zinc to produce a catalytic metal sulfide. Contacting is continued at 400-650° F. to convert the organic sulfur compounds into organic sulfides. Gums and color bodies are also removed. (Union)

2,183,968 Mercaptans are recovered from distillates by treatment with caustic soda solution at 32-300° F. The mercaptans remain dissolved in the distillate which is treated with further caustic soda solution at a lower temperature (32-60° F.) so that the solution absorbs the greater portion of the mercaptans. (Tidewater)

2,185,577 Polymer gasoline is mixed with sulfuric acid of 45-75% concentration at a temperature sufficient to render a substantial part of the acid miscible with the polymers. Layers are formed and gasoline recovered from the sulfuric acid layer. (S. O. Dev.)

2,185,768 Distillate is treated with an aqueous lead acetate solution of litharge, aqueous and oil layers separated and enough sulfur is added to the oil layer to convert all oil-soluble lead mercaptides in lead sulfide and di-alkyl disulfides. (U. O. P.)

2,189,850 Mercaptans are removed by converting to copper mercaptides which are extracted with an alkyl amine such as ethanolamine or ethylene diamine. (S. O. Dev.)

2,190,007 Distillate is treated with a higher molecular weight mercaptan in the presence of sodium plumbite. The mercaptan is consumed and the removal of corrosive constituents is completed by treatment with a lower molecular weight mercaptan in the presence of sodium plumbite. (S. O. Ind.)

2,190,471 Suppression of acidic compounds. Sulfuric acid-treated cracked distillate is treated with a hydrocarbon-soluble heavy metal salt of a phenolic body and separating insoluble metallic compounds which form. (S. O. Dev.)

2,196,281 A gaseous mixture is contacted with an aqueous alkaline solution of monochlorphenol containing ortho and para monochlorphenol. The solution is regenerated by heating. (S. O. Ind.)

2,197,873 Distillate is subjected to the sweetening action of a copper salt, then percolated through a bed of granular solids comprising mixed oxides of sodium and calcium to remove reaction products of the copper sweetening. (U. O. P.)

Shell Oil Co. Patents

2,149,379 In the process of separating organic acid-reacting substances contained in a water-insoluble neutral or basic organic liquid, the liquid is treated with an aqueous solution of a strong alkaline base such as sodium hydroxide containing a dissolved salt of a fatty acid having 3 to 5 carbon atoms under conditions to absorb acid-reacting substances. Salts include isobutyrate, salt of an alkali metal, and sodium salt.

2,149,380 Similar to above except dissolved salt is potassium salt of a fatty acid having 1 to 6 carbon atoms per molecule. Salts include potassium acetate and potassium isobutyrate, and potassium hydroxide is given as the alkaline base.

2,152,166 Similar to above except dissolved substance is butylene glycol with 15-50% water. Other dissolved materials include isobutylene glycol, 2-3-butylene glycol.

2,152,720 Similar to above except dissolved substance is 15-85% of a compound selected from group consisting of amino-alkylamines and alkanolamines whose alkylene groups contain less than 4 carbon atoms. Substances include ethanol amine, propanol amine, and ethylene diamine.

2,152,722 Similar to above except dissolved substance is a salt of an aliphatic hydroxy carboxylic acid having 3 to 7 carbon atoms.

2,152,723 Similar to above except dissolved substance is an aliphatic diamino alcohol having 3 to 5 carbon atoms.

2,152,721 In the regenerative process connected with mercaptan extraction with an alcoholic aqueous solution of an alkali metal hydroxide and involving blowing air through spent solution, an improvement is made in extraction by employing a solution consisting of 50-60% of an alcohol selected from the group consisting of methyl and ethyl alcohols, at least 25% water and an alkali metal hydroxide.

2,152,724 In removing mercaptans by steaming from an aqueous solution of a caustic alkali an improvement is made by diluting the solution with water and passing direct steam through the diluted solution under conditions to prevent substantial condensation of steam.

2,156,577 Similar to 2,149,379 except the dissolved substance is a salt of an aliphatic amino carboxylic acid having 4 to 7 carbon atoms.

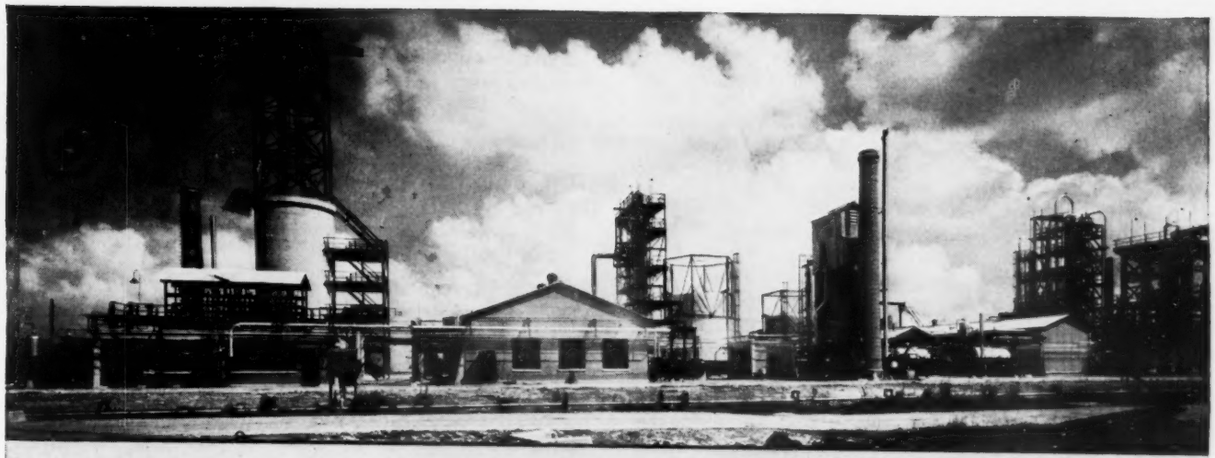
2,168,078 Similar to above except the dissolved substance is an aliphatic amino glycol having 3 to 5 carbon atoms.

2,183,801 Similar to above except the dissolved substance is propylene glycol.

2,186,398 Similar to above except the dissolved substance is a compound having the formula $X_1R_1YR_2X_2$ in which R_1 and R_2 are alkylene radicals having 4 to 6 carbon atoms, X_1 and X_2 are amino hydroxy radicals, and Y is oxygen or sulfur.

2,149,035 In removing mercaptans liquid hydrocarbons are treated at below 200°F. with metallic copper in the presence of a small amount of sulfur dioxide in the absence of sulfuric acid.

2,174,810 A liquid hydrocarbon solution of mercaptans is treated at below 200°F. with metallic copper in the presence of hydrogen halide gas. Mercaptans converted to copper mercaptides are treated with an aqueous solution of ferric chloride to convert them to disulfides and copper chloride, thereby reducing ferric chloride to ferrous chloride. The aqueous solution containing iron and copper chlorides is separated from the hydrocarbon fluid and the ferrous chloride oxidized to ferric chloride. The oxidized aqueous solution is contacted with metallic iron to replace the copper in the solution with iron, thereby precipitating the



Processes for HIGH OCTANE GASOLINE

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LUMMUS

PETROLEUM REFINING PLANTS

metallic copper and regenerating the ferric chloride solution.

2,162,202 Clay is reactivated by treatment at above 300°F. with water as the sole displacing agent for tarry adsorbed matter, in the presence of an added aromatic hydrocarbon oil capable of dissolving tar but immiscible in water and resistant to decomposition under the conditions of treatment. Pressure is sufficient to keep water in the liquid phase.

2,146,353 Hydrocarbons are contacted with alkali alcoholate under conditions to form hydrogen sulfide and freeing the hydrocarbons from carbonyl sulfide type sulfur compounds. Hydrogen sulfide is then removed by treating with aqueous alkali hydroxide.

2,157,879 Hydrogen sulfide removal. In a process in which a flowing fluid is scrubbed with an aqueous solution of an alkaline absorbent for the acidic impurities an improvement is made whereby the regenerated solution is divided into at least two portions. At least one portion is diluted with water to produce solutions of different concentrations of absorbent, resulting dilute solutions having ratios of acidic impurities to absorbent not substantially greater than those of the more concentrated solutions. The fluid is scrubbed with the solutions in the order of increasing dilution.

2,162,963 Hydrocarbons are separated into cuts containing relatively low and relatively high ratios of carbon to hydrogen. The first is flowed through an extraction zone countercurrently to a solvent for sulfur compounds under conditions causing formation of counter flowing raffinate and extract phases. The second cut is introduced into the extraction zone at an intermediate point, the conditions being such that the first cut washes hydrocarbons from the extract phase to produce a washed extract phase containing the solvent sulfur compounds.

2,174,174 Neutralization. Distillate is treated with an aqueous alkali metal carbonate-bicarbonate solution containing small amounts of alkyl phenols so as to form two layers, an aqueous layer containing an alkali metal salt of the sulfur acid and a distillate layer substantially free from the sulfur acid containing alkyl phenols. The layers are separated and the distillate layer treated with 30-50% concentrated aqueous alkali metal hydroxide to produce an extract comprising an aqueous alkali metal alkyl phenolate solution and a residual distillate. The extract is separated and carbonated to liberate alkyl phenols and to produce an alkyl phenol phase and an aqueous carbonate-bicarbonate solution phase containing a portion of the liberated alkyl phenols. The liberated alkyl phenols phase is separated from the resulting aqueous solution phase.

2,193,417 Removal of acid compounds. In removing neutral oil-soluble sulfuric acid compounds with an aqueous solution of caustic alkali there is added a small amount of ammonia (20% of acids to be liberated).

Phillips Petroleum Co. Patents

2,151,721 Hydrocarbons containing non-heterocyclic and heterocyclic organic sulfur compounds are vaporized and contacted at 600-800°F. with a bauxite catalyst for 2-10 seconds. The non-heterocyclic compounds are converted to hydrogen sulfide which is removed and the hydrocarbons heated to 800-1100°F. to decompose the heterocyclic sulfur compounds to hydrogen sulfide.

2,162,319 In treating cracked gasoline in the vapor phase at atmospheric pressure with a solid adsorbent desulfurization catalyst at 500-750°F., the life of the catalyst is increased by reducing the formation of catalyst poisons. This is accomplished by maintaining flow rate of vapors at 3 to 50 liquid volumes of gasoline stock per hour per volume of catalyst but with a pressure-flow rate relationship such that the contact time is less than two seconds.

2,163,312 In sweetening oils with solutions of copper salts, copper mercaptides are removed by contacting the oil in the absence of air with a solid adsorbent material impregnated with a solution of cupric and chloride ions.

2,167,602 Vaporous gasoline at atmospheric to 100 psi. is contained with a bauxite catalyst at 900-1050°F. at a flow rate of 1-10 volumes of gasoline per hour per volume of catalyst. Vapors are cooled and separated by condensation and uncondensed gas is passed through a vapor recovery system and a gas with a hydrogen to methane ratio greater than one is obtained.

2,170,180 Fuller's earth for treating is maintained in a vertical cylindrical vessel provided with a cylindrical cavity into which gasoline vapors are introduced. Vapors then passed outwardly through many openings in the wall of the cavity to be distributed through the bed of clay. Treated liquid product is collected from the bottom of the vessel.

2,181,877 Hydrocarbons are passed in the absence of added hydrogen into contact with Brucite at 500-1200°F. and atmospheric pressure or higher at a rate to minimize cracking.

2,183,591 Vaporous gasoline is contacted at 100 psi. with solid adsorbent mineral ore of the bauxite type impregnated with a solution of chromium compound subsequently converted to the oxide at 800-1100°F. with a flow rate of 1-10 liquid volumes of gasoline per hour per volume of catalyst.

GUM STABILIZATION PATENTS

2,144,276 Vaporous hydrocarbons are treated with an adsorbent material capable of polymerizing objectionable unsaturates in the first stage which produces a finished furnace oil. Gasoline vapors are removed and similarly treated in a second stage of the process. (S. O. Ind.)

2,149,351 Motor fuel is heated above vaporizing temperature (500-700°F.) at 500-1500 psi. long enough (3-10 minutes) to render the motor fuel gum free upon subsequent fractionation. An inhibitor is then added to make the fuel gum stable. (Gas, Antioxidant)

2,151,374 Gaseous olefins are contacted with solid adsorbent catalytic material at such temperature and pressure as will promote polymerization of olefins to gasoline-like polymers, in the presence of a phenol. The phenol is caused to react with a portion of the olefinic constituents, forming an anti-oxidant reaction product. (Gulf)

2,154,424 Gum improvement and sweetening. Liquid distillate is contacted with a material consisting of an inorganic compound of an alkaline earth metal which will react to cause removal of gums, gum-forming compounds, and moisture. The distillate is then passed in the presence of a gaseous oxidizing agent and in the absence of water, into contact with a solid oxidation catalyst, sodium ferrite. ((Dolbear)

2,162,715-6-7 Gum, color, and sulfur improvement. Cracked gasoline is subjected to polymerizing conditions by passing it at 200°F. or more through adsorptive material. An independent heavier oil is heated and mixed with the distillate under pressure sufficient to maintain the gasoline in the liquid phase. The pressure is then reduced allowing the gasoline to vaporize, leaving the polymerized and sulfur containing constituents in the unvaporized oil. (Hancock)

2,162,992 In treatment of gasoline where gum-forming constituents are converted into reaction products of low vapor pressure, conversion of gum-forming constituents and separation of reaction products is accomplished by bubbling the vapors of cracked gasoline through a liquid body of acid of phosphorus at a temperature sufficiently high to avoid condensation of the cracked hydrocarbons and low enough to avoid vaporization of reaction product. (Monsanto)

2,164,771 In sulfuric acid treatment of cracked gasoline, an improvement is made by contacting the distillate with dilute sulfuric acid of 55-57% strength. Inherent gum is completely removed and formation of higher boiling polymerization products is prevented. (Texaco)

2,172,436 Cracked vapors are contacted with a solid adsorbent catalytic material and high-boiling polymers separated by contact with a liquid solvent which is a hydro-

carbon derivative. A portion of the solvent remains in the condensate. (Gray)

2,174,908 Gum inhibition, antiknock improvement, sulfur reduction, improved lead susceptibility, improved color stability. Liquid is heated below the cracking temperature and maintained in the liquid phase in the presence of an acid of phosphorus. A catalytically active metal may also be present. Gum-forming products are converted to high boiling products that can be separated by distillation. (Monsanto)

2,180,324 Hydrocarbons are passed through a heating zone in the liquid phase and subjected to a temperature of 600°F. under pressure of 1200 psi. (Pure)

2,183,590 In decolorizing oils by mixing with a hydrous, precipitated, absorbent magnesium silicate, an improvement is made by adjusting the moisture content of the silicate to 18% by weight of silicate for treatments above 400°F., 12-18% at 220-400°F., and 6-12% at 100-220°F. (Johns Man.)

2,188,075 Vapors having an end-point of 500-600° F. are partially condensed and contacted with a solid adsorbent. Impurities are separated from portion in which polymerization is complete and a second stage of treatment is provided for the remaining fraction. (Gray)

2,189,058 Oil is contacted in the absence of hydrochloric acid with a dry, pre-formed solid reaction product of a zinc silicate and hydrochloric acid. (U. O. P.)

2,192,174 Gasoline free of steam is contacted with a catalyst body free of sulfuric acid and consisting of an acid of phosphorus at a temperature high enough to prevent substantial condensation of converted gum-forming constituents which are removed by fractional condensation. (Monsanto)

2,193,763 Oil is washed with 0.3% to 0.8% by volume of concentrated sulfuric acid sufficient to polymerize the gum forming unsaturates but insufficient to polymerize other unsaturates. Light oil is separated from acid sludge, heated to 140-158° F., washed with alkali, and volatile constituents distilled out at 208-210° F. (Koppers)

2,194,321 Distillates are subjected to sweetening action of a copper compound and then treated with a salt of ortho phosphoric acid to remove reaction products. One of the best reagents is mono-ammonium-dihydrogen ortho phosphoric acid. (U. O. P.)

ANTI-KNOCK IMPROVEMENT

2,146,039 Motor fuel is treated with a selective solvent having a relatively higher solvent power for nonparaffinic constituents than for paraffinic constituents. The paraffinic fraction is heated to 900-1050° F. over a dehydrogenating catalyst long enough to improve anti-knock properties. (S. O. Dev.)

2,163,269 Relatively high anti-knock constituents of gasolines are separated from those of low anti-knock value by subjecting gasolines to selective solvent action of cinnamaldehyde. A lower layer contains the solvent and high anti-knock constituents. (U. O. P.)

2,164,334 Naphtha is chlorinated to contain 5-20% chlorine, then heated to 400-1000° F. under substantial pressure which is reduced to atmospheric and in the presence of a dechlorinating catalyst such as fuller's earth. (Atlantic)

2,173,452 Cracked gasolines are treated with concentrated sulfuric acid under carefully regulated temperature conditions in a counter-current reaction chamber. A temperature range of 30° to 70° F. is maintained. (Power Pats.)

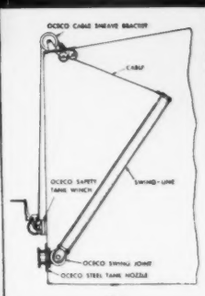
2,198,545 Distillate is vaporized and passed through a tower containing a catalytic mass consisting of an oxide of a metal of the sixth group of the periodic table at 950° F. at the rate of 20 gallons per hour per cubic foot of space in the tower. (Danciger)

Miscellaneous Treating Patents

2,150,170 Hydrocarbons are heated, passed through a series of beds of adsorbent material, and while still hot passing them in contact with sodium plumbite. The treated hydro-

OCECO Swing Lines

MEET THE REQUIREMENTS OF PRACTICAL OPERATION



• Oceco swing line equipment consists of a steel nozzle, a heavy duty swing joint that will not twist or leak, a gas-tight stuffing box and cable sheave mounted on the tank top, and winch—all of Oceco's serviceable design and dependable manufacture. Winches are worm geared and self-locking. Oceco swing lines meet any tank requirement. Write for descriptive literature.

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885 Addison Road • Cleveland, Ohio

Engineering and Sales Services: NEW YORK • CHICAGO • PITTSBURGH

BEAUMONT, TEXAS • TULSA, OKLAHOMA • LOS ANGELES • OAKLAND, CALIF.

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carbons are fractionated in two stages, the first under atmospheric pressure and the second below atmospheric pressure. (Keeling)

2,179,008 Impurity removal. A cracked gasoline is passed upwardly through a series of packed towers each containing a contact material along with a heavier liquid reagent. (Campbell)

Gasoline Treating Patents In 1939 and 1940

Patent No.	Date of Issue (1939 Dates)	Patentors	Assigned
2,144,276	Jan. 17	Herbert M. Steininger	Standard Oil Co. (Ind.)
2,146,027	Feb. 7	Read and Broidrick	Standard Oil Dev. Co.
2,146,039	Feb. 7	J. M. Whiteley	Standard Oil Dev. Co.
2,146,353	Feb. 7	T. W. Rosebaugh	Shell Development Co.
2,149,035	Feb. 28	von Fuchs and Elwood	Shell Development Co.
2,149,351	Mar. 7	Lang and Osterstrom	Gasoline Antioxidant Co.
2,149,379	Mar. 7	Yabroff and White	Shell Development Co.
2,149,380	Mar. 7	Yabroff and White	Shell Development Co.
2,150,149	Mar. 14	Burk and Hughes	Standard Oil Co. (Ohio)
2,150,170	Mar. 14	Wm. O. Keeling	.....
2,151,374	Mar. 21	H. B. Cooke	Gulf Oil Corp.
2,151,721	Mar. 28	W. A. Schulze	Phillips Pet. Co.
2,152,166	Mar. 28	D. L. Yabroff	Shell Development Co.
2,152,720	Apr. 4	D. L. Yabroff	Shell Development Co.
2,152,721	Apr. 4	D. L. Yabroff	Shell Development Co.
2,152,722	Apr. 4	Yabroff and White	Shell Development Co.
2,152,723	Apr. 4	D. L. Yabroff	Shell Development Co.
2,152,724	Apr. 4	Yabroff and White	Shell Development Co.
2,154,424	Apr. 18	C. E. Dolbear	Wiseman, Wiseman and Dolbear (trustees)
2,154,988	Apr. 18	Mizata, Yoshimura, etc.	Kaisha, Tokyo, Japan
2,155,007	Apr. 18	Edwards, Jr., and Stark	Tide Water Associated Oil Co.
2,156,577	May 2	Yabroff and White	Shell Development Co.
2,157,223	May 9	E. D. Sutton	Pure Oil Co.
2,157,879	May 9	E. W. Zublin	Shell Development Co.
2,162,202	June 13	G. H. von Fuchs	Shell Development Co.
2,162,319	June 13	W. A. Schulze	Phillips Petroleum Co.
2,162,670	June 13	Burk and Hughes	Standard Oil Co. (Ohio)
2,162,715	June 20	W. T. Hancock	.....
2,162,716	June 20	W. T. Hancock	.....
2,162,717	June 20	W. T. Hancock	.....
2,162,962	June 20	D. S. McKittrick	Shell Development Co.
2,162,992	June 20	Ault and Hochwalt	Monsanto Chemical Co.
2,163,269	June 20	J. A. Chenicek	Universal Oil Products Co.
2,163,312	June 20	W. A. Schulze	Phillips Petroleum Co.
2,164,334	July 4	E. M. Marks	Atlantic Refining Co.
2,164,665	July 4	Rogers and Shoemaker	Standard Oil Co. (Indiana)
2,164,771	July 4	Marcus T. Kendall	The Texas Co.
2,164,851	July 4	Yabroff and White	Shell Development Co.
2,167,602	July 25	W. A. Schulze	Phillips Petroleum Co.
2,168,078	Aug. 1	D. L. Yabroff	Shell Development Co.
2,168,851	Aug. 8	Yabroff and White	Shell Development Co.
2,170,180	Aug. 22	M. P. Youker	Gray Processes Corp.
2,170,336	Aug. 22	J. C. Morrell	Universal Oil Products Co.
2,172,436	Sept. 12	Cooke and Mandelbaum	Gray Processes Corp.
2,173,452	Sept. 19	S. R. Merley	Power Patents Co.
2,174,174	Sept. 26	Greensfelder and Spaght	Shell Development Co.
2,174,510	Oct. 3	Marion H. Gwynn	.....
2,174,810	Oct. 3	von Fuchs and Border	Shell Development Co.
2,174,908	Oct. 3	Ault and Hochwalt	Monsanto Chemical Co.
2,176,196	Oct. 17	Beamer and Hooton	Standard Alcohol Co.
2,177,343	Oct. 24	E. C. Hughes	Standard Oil Co. (Ohio)
2,179,008	Nov. 7	S. E. Campbell	.....
2,180,324	Nov. 14	R. C. Osterstrôm	The Pure Oil Co.
2,181,877	Dec. 5	H. E. Drennan	Phillips Petroleum Co.
2,183,590	Dec. 19	E. W. Rembert	Johns-Manville Corp.
2,183,591	Dec. 19	W. A. Schulze	Phillips Petroleum Co.
2,183,782	Dec. 19	U. B. Bray	Union Oil Co. California
2,183,801	Dec. 19	D. L. Yabroff	Shell Development Co.
2,183,968	Dec. 19	McCormick and Lazar	Tide Water Associated Oil Co.
	1940 Dates		
2,185,577	Jan. 2	Voorhies, Jr., and Stahly	Standard Oil Development Co
2,185,768	Jan. 2	W. W. Johnstone	Universal Oil Products Co.
2,186,398	Jan. 9	D. L. Yabroff	Shell Development Co.
2,188,075	Jan. 23	H. B. Cooke	Gray Processes Corp.
2,189,058	Feb. 6	R. B. Day	Universal Oil Products Co.
2,189,850	Feb. 13	T. C. Whitner, Jr.	Standard Oil Development Co
2,190,007	Feb. 13	Batchelder and Shoemaker	Standard Oil Co. (Indiana)
2,190,471	Feb. 13	Carleton Ellis	Standard Oil Development Co
2,192,174	Mar. 5	Ault and Hochwalt	Monsanto Chemical Co.
2,193,471	Mar. 12	Wm. P. Gaye	Shell Development Co.
2,193,763	Mar. 12	Irvin H. Jones	Koppers Co.
2,194,321	Mar. 19	Pennington and Benedict	Universal Oil Products Co.
2,196,281	Apr. 9	V. Voorhees	Standard Oil Co. (Indiana)
1,197,873	Apr. 23	Morrell and Benedict	Universal Oil Products Co.
2,198,545	Apr. 23	Morris Levine	Daneiger Oil & Refineries, Inc.

The Hydraulic Institute is sponsoring an annual essay award, open to employes of company members of the institute, to stimulate interest of younger men in the problems of the pump industry. Prizes of $100, $50, and $25 are offered for essays on any subject of particular interest and value to the pump industry.

New Patents

Compiled by R. E. Burnham, patent and trade-mark attorney, 511 Eleventh Street, NW, Washington, D. C., from whom copies may be obtained at rate of 25c each. State number of patent and name of inventor when ordering.

March 19, 1940

Conversion of hydrocarbons—H. V. Atwell, White Plains, N. Y., assignor to Process Management Co. Filed May 23, Dec. 17, and Dec. 31, 1936. Nos. 2,193,797, 2,193,798, and 2,193,799.

Nickel borate catalyst, and catalytic dehydrogenation and like—Llewellyn Heard, Hammond, Ind., assignor to Standard Oil Co. (Ind.) Filed Nov. 26 and Dec. 13, 1937. Nos. 2,193,814 and 2,193,815.

Chemical converter—E. J. Houdry, Haverford, Pa., assignor to Houdry Process Corp. Filed Oct. 29, 1937. No. 2,193,816.

Bubble cap for refractionating towers—A. L. Schwandt, East Chicago, Ind. Filed July 11, 1938. No. 2,194,126.

Method of purifying wax—F. W. Padgett, Ridley Park, Pa., assignor to Sun Oil Co. Filed Mar. 13, 1936. No. 2,194,185.

Catalytic treatment of combustible carbonaceous materials—Pier, Simon, and Jacob, Germany, assignors to Standard-I.G. Co. Filed Dec. 28, 1935. No. 2,194,186.

Oil purification process—J. B. Rogerson, El Dorado, Ark. Filed Mar. 21, 1938. No. 2,194,269.

Treatment of hydrocarbon gases—A. V. Grosse, Chicago, assignor to Universal Oil Products Co. Filed Feb. 24, 1936. No. 2,194,280.

Treatment of hydrocarbons—D. L. Pennington and W. L. Benedict, Chicago, assignors to Universal Oil Products Co. Filed Dec. 31, 1937. No. 2,194,321.

Treatment of hydrocarbon oils—Hans Tropsch, Chicago, assignor to Universal Oil Products Co. Filed June 21, 1935. No. 2,194,335.

Medicinal white oil and process of preparing—G. A. Kessler, Petrolia, Pa., and Leo Liberthson, New York, N. Y., assignors to L. Sonneborn Sons, Inc. Filed Dec. 9, 1937. No. 2,193,819.

Refined hydrocarbon oil—C. M. Loane, Hammond, Ind., assignor to Standard Oil Co. (Ind.) Filed June 13, 1938. No. 2,194,312.

Production of naphthalene—A. M. Sachanen and A. W. Francis, Woodbury, N. J., assignors to Socony-Vacuum Oil Co. Filed Oct. 8, 1938. No. 2,194,449.

* * *

March 26, 1940

Art of heating hydrocarbons—E. C. Herthel, Flossmoor, Ill., and T. B. Kimball, Hammond, Ind., assignors to Sinclair Refining Co. Filed Feb. 4, 1935. No. 2,194,500.

Process for producing gasoline and gas, and process for producing commercial gas—F. T Snyder, Brookline, Mass., assignor to Fuel Research Development Corp. Filed June 14, 1937. Nos. 2,194,574 and 2,194,575.

Process of treating hydrocarbon oil—S. W. Darling, Houston, assignor to Texaco Development Corp. Filed June 15, 1937. No. 2,194,692.

Apparatus for gaseous solvent extraction—H. W. F. Lorenz, Jersey City, N. J. Filed Sept. 22, 1936. No. 2,194,708.

Processes for dewaxing oils—U. B. Bray, Palos Verdes Estates, and J. A. Campbell, Jr., Manhattan Beach, Cal., assignors to Union Oil Co. (Cal.) Filed Mar. 31, 1936. Nos. 2,194,968 and 2,194,969.

Extreme pressure lubricant—F. R. Moser and D. R. Nijk, Amsterdam, Netherlands, assignors to Shell Development Co. Filed Aug. 2, 1937. No. 2,194,478.

Motor fuel, and power alcohol—L. M. Christensen, Atchison, Kans., assignor to The Chemical Foundation. Filed Feb. 17, 1938. Nos. 2,194,495 and 2,194,496

Apparatus for determining lubricating values of oils—Frederick Ray, Short Hills, N. J., assignor to Automatic Appliance Co., St. Louis, Mo. Filed July 5, 1929. No. 2,194,527.

Apparatus for recovering gasoline and like—G. G. Urquhart, Cynwyd, Pa. Filed July 21, 1936. No. 2,194,680.

Method of preventing formation of gumlike products in oils—C. G. Egerton, London, England. Filed June 30, 1938. No. 2,195,167.

* * *

April 2, 1940

Production of liquid polymerization products from olefins—Keunecke and Muench, Germany, assignors to I. G. Farbenindustrie. Filed July 21, 1937. No. 2,196,747.

Treatment of hydrocarbon oils—Charles Wirth III, Chicago, assignor to Universal Oil Products Co. Filed Sept. 30, 1937. No. 2,195,833.

Lubricant containing di-iso-butyl phenol—T. L. Cantrell, Lansdowne, Pa., assignor to Gulf Oil Corp. Filed Sept. 2, 1936. No. 2,195,510.

Blending agent for lubricating oils—J. I. Wasson, Elizabeth, N. J., assignor to Standard Oil Development Co. Filed Dec. 24, 1936. No. 2,195,549.

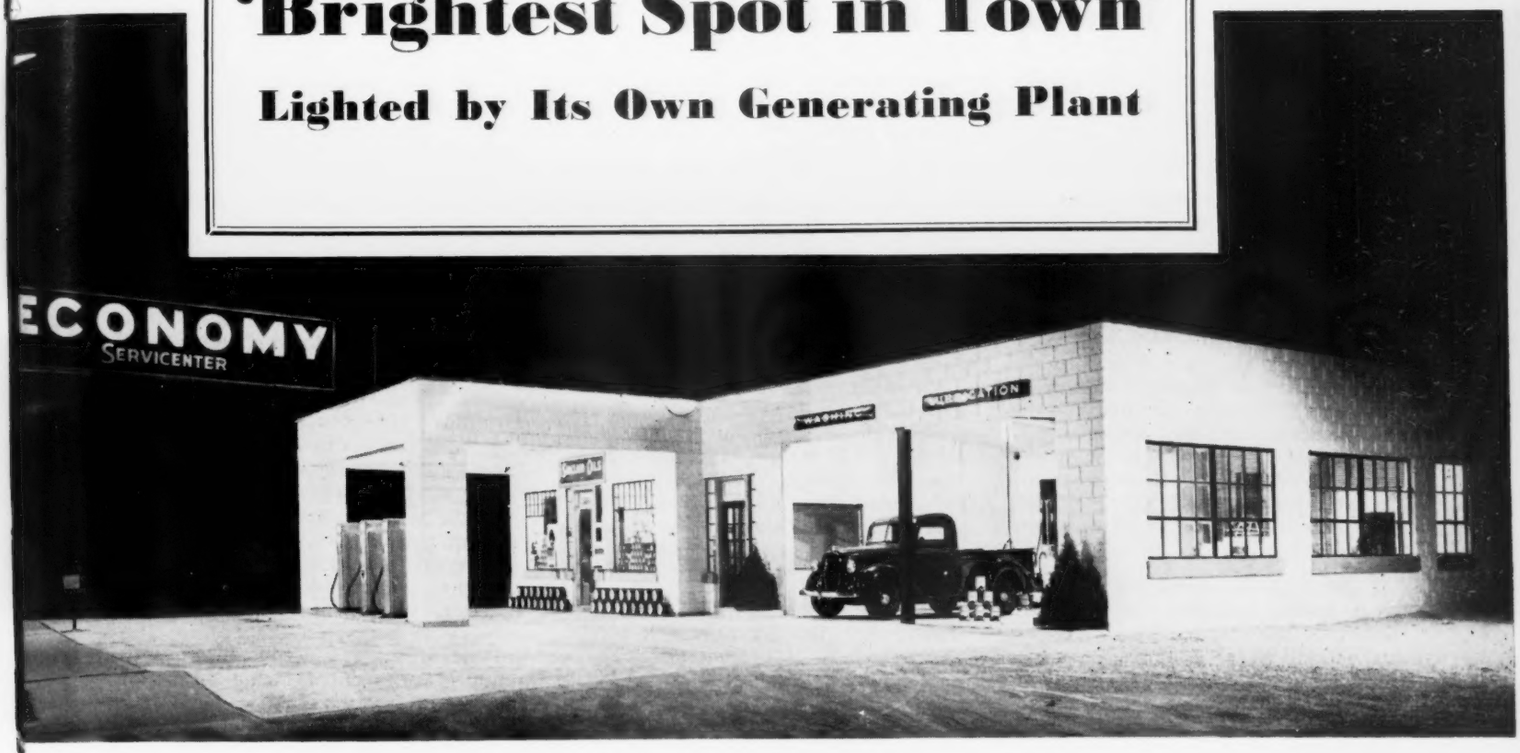
Stable mineral oil and method of preparing—B. H. Shoemaker, Hammond, Ind., assignor to Standard Oil Co. (Ind.) Filed Feb. 6, 1937. No. 2,195,659.

Lubricant composition—G. S. Cavanaugh, Los Angeles, assignor to Pennzoil Co. Filed May 28, 1938. No. 2,195,669.

Lubricating oil—E. C. Carmichael, Jackson Heights, R. J. De Gray, Forest Hills and J. H. Prall, Brooklyn, N. Y., assignors to Socony-Vacuum Oil Co. Filed Sept. 23, 1938. No. 2,196,101.

'Brightest Spot in Town'

Lighted by Its Own Generating Plant



A night view of the Economy Oil Co.'s Servicenter, Joplin, Mo., showing what 11,000 watts of illumination outside and 3000 watts inside will do to make a station a welcome stop at night. No additional lighting was used in obtaining this photograph which shows the interior in sharp detail. Owner "Ed" McCartney will not have a bulb of less than 300 watts around his stations, which are lavishly lighted because he generates his own electricity at a much lower cost than rates of the local light company

INSTALLATION of home assembled generating units at two of its "Servicenters" enabled Economy Oil Co. of Joplin, Mo. to cut its light and power costs between 25 and 50%, while making those two service stations "the brightest spots" in the Joplin, Mo. trade area.

The more current generated and used, the greater is the percentage cut in current cost when compared with cost of equivalent amount of current bought from the local utility company. This is because operating cost of a generating unit is only slightly higher at maximum load than when operated at minimum current requirements.

Since more than 35,000 watts of illumination can be used at one station and approximately 20,000 watts at the other, savings in current cost amounts to a sizeable sum.

The individual generating units are the result of Owner Edward McCartney's desire for light, and still more light at his service stations. He believes the brighter and lighter the service station, the more business it will attract.

Mr. McCartney gets daytime brightness by painting exterior and interior of his stations a glossy white, and by mixing a white pigment in concrete for his driveways.

Night brightness is obtained by an abundant use of large floodlights—most of them having 1500 watt globes—and by use of high-watt globes within the station. He'll have nothing less than a 300-watt globe in any of his stations.

There must be something in Mr. McCartney's "light" theory. He has no bulk plant and does no wholesale business. He's the pioneer independent retail distributor in Joplin, and now has 6 service stations. He handles no accessories, confining his business strictly to petroleum products.

Those 6 stations in 1939 sold almost 1,200,000 gals. of motor fuel in a city of approximately 35,000 population. He was at the top of the gallonage list for his trade territory.

Mr. McCartney experimented with station lighting for several years. He tried many types of flood lamps, only to find that each month his light and power bill increased. Eventually, he found that he could not have the type of illumination desired at a cost he could afford—if he continued to buy his current from the utility company.

Accordingly, Mr. McCartney assembled and installed his first generating unit in 1935. He now has 3 units. Two are at his largest Servicenter where original unit carries the day load while the second unit handles the night load. The third generator is at his new station built last fall.

The first unit, installed at his original Servicenter, consisted of a new Ford V-8, 85 h.p. engine and a secondhand General Electric motor which was rewound and converted to a 15-kilowatt, 110-220 volt AC generator. The two new units are powered with new Mercury V-8, 95 h.p. engines. One generator is a rebuilt, secondhand motor with a generating capacity of 20 k.w., while the other also rebuilt, has a capacity of 25 k.w.

There is little difference in the actual assembly of the 3 units. The largest unit is shown in an accompanying photograph.

It will be noted that the Mercury motor and the generator, as well as the "exciter" motor, are mounted on a 6-in. "I" beam frame.

The weight of the assembly holds it in place without use of anchor bolts.

Mr. McCartney uses the Mercury and Ford engines for two reasons:

1. The power flow from an 8-cylinder motor is smoother than from either a 4 or 6-cylinder engine. Thus, he can operate his units without having to buy a volt regulator, which

would cost him approximately $125. The engine governor controls the voltage.

2. The Ford Motor Co.'s exchange plan permits him to trade worn-out engines for new ones at a fraction of the original cost.

It will be seen from a study of the picture that there is nothing complicated about the assembly. The Mercury motor is connected to the generator by a direct-drive shaft, the exciter motor has been mounted on one end of the "I" beam frame, and an instrument panel has been placed between motor and generator.

IN upper righthand corner of panel is the switch and starter button. In upper center are regular Mercury instruments recording oil pressure, engine temperature and amperes. In upper lefthand corner is voltmeter which records voltage from generator. The large knob at lower center of panel is the rheostat for regulating voltage.

It also will be noted that the unit has a special radiator and fan. Mr. McCartney says it is imperative that this special water cooling equipment be used. He warns against the use of a "barrel" or other makeshift cooling method.

The unit shown in the picture cost a little less than $700. Here are Mr. McCartney's figures:

Mercury V-8 motor assembly	$177.54
Special radiator and fan	59.50
Power take-off	91.80
Pierce governor	23.00
Generator assembly	325.00
	$676.84

It will be noted in above tabulation, cost of "I" beam frame, cost of installation and other incidental items have not been included. Neither is the light meter installed to check volume of current used. He says the meter is not essential.

When Mr. McCartney installed his first unit—the Ford engine and 15 k.w. generators—in 1935, he used a belt-driven power takeoff, and found there was just enough "lag", at times, to cause more fluctuation in voltage than was desirable. Therefore, he switched to direct drive shaft method of connecting engine and generator.

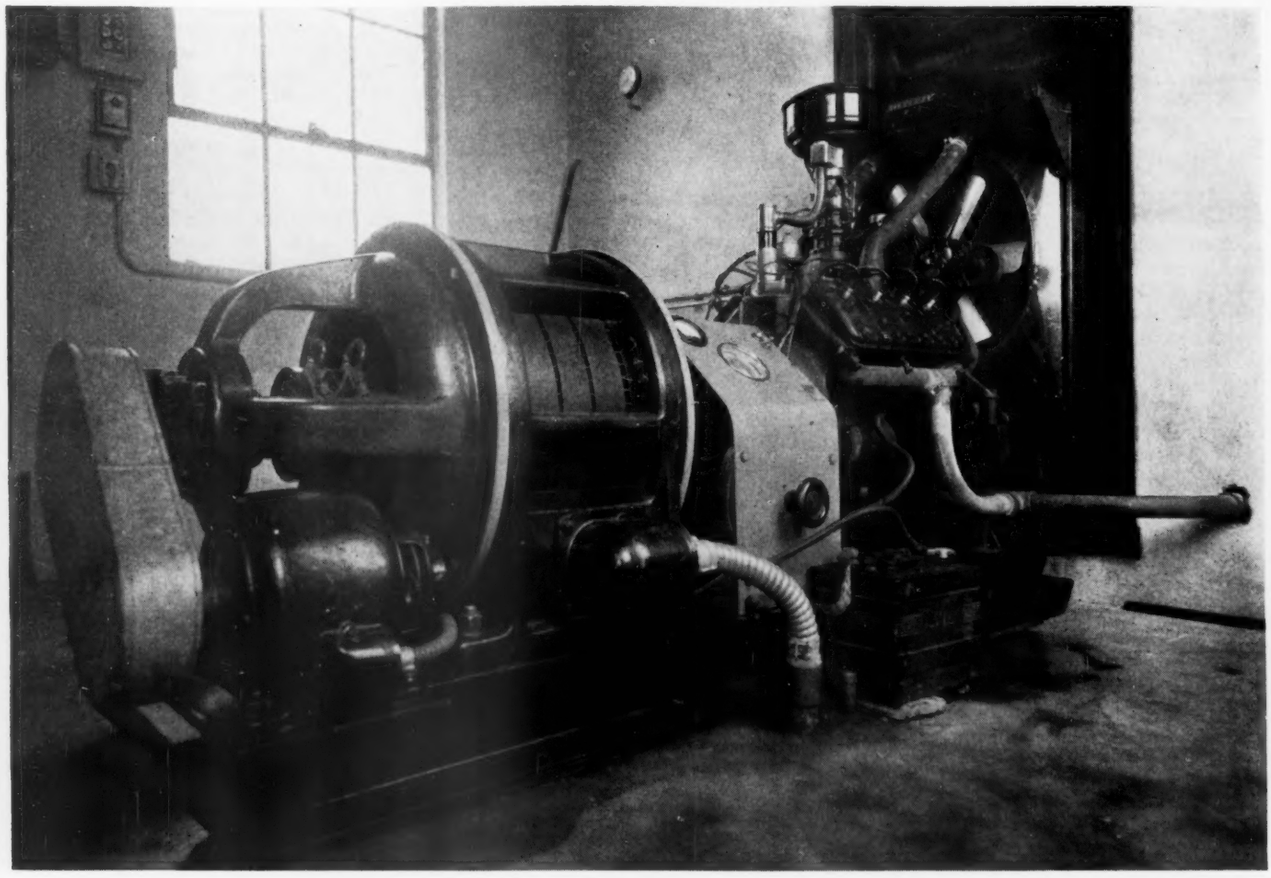
At time he installed his first generating unit, the Servicenter it served was only half its present size. Early last summer, Mr. McCartney added a ladies lounge, a large lubrication and washroom, and increased capacity of his air compressor.

At this Servicenter, he now generates current to operate a total of 11,000 watts of outside illumination; 125 ft. of neon lighting; 1.5 h.p. air compressor motor; battery re-charger; 3000 watts of inside illumination; refrigerator cooler and 2 drinking fountains; electric heating units for the salesroom, office and ladies lounge during the winter, and electric fans for those places in the summer, and the 3 gasoline pumps.

IT will be noted in picture of generating unit, that radiator is set in a vaned window with a hinged, solid board shutter on the outside.

Now Mr. McCartney has 2 fans. One blows air through the radiator and out the window while the other draws air through the radiator and blows it back over the engine.

In the summer, he opens shutter on window and uses the fan which blows air outside. In the winter, he uses the other fan, drawing air through the radiator, where it is warmed, then blowing it back into the room. The volume of warm air thus blown into room is sufficient to keep adjoining



This home-assembled electric current generating unit makes the Economy Oil Co.'s Servicenter, Twenty-seventh and Main streets, Joplin, Mo., "the brightest spot in the city." The unit is housed in a small room at the rear of the lubrication and wash room. The power unit is a Mercury motor, while the generator is a rewound, second-hand electric motor. Although appearing large in the picture the unit, due to the direct drive shaft connection, is unusually compact. It is not more than 6 feet in length

A western refiner says—

Ninety-six per cent of all gasoline manufactured by us is leaded and of course going out either as "Q" or Ethyl but I fully understand that without Dubbscracking we could not exist under the present scheme of things

Maybe you can exist without Dubbscracking but why punish yourself? You can do so much better with it It pays its own way—and then some

And U. O. P. catalytic polymerization increases gasoline yield still more and boosts octane rating

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

This trio guides destinies of Economy Oil Co., which for 17 years has been an independent retail distributor in Joplin, Mo. Left to right, they are Edward McCartney, Mrs. McCartney, and Kelsey Norman, counsel

lubrication and washroom comfortably warm even in near-zero weather.

When Mr. McCartney built his second Servicenter the past summer, he installed the new 20-k.w., Mercury-driven unit in a "power house" back of the station. Since this station is smaller than original Servicenter, he does not have a current consumption sufficiently large to operate the unit during day time. His only current requirements at this station are for 3 gasoline pump motors and the ½ h.p. air compressor motor.

Accordingly, he uses city current during the day, but runs the generating unit at night and uses its current for the battery of floodlights, inside illumination and the large neon-lighted tower sign.

The Ford V-8 engine assembly uses approximately 1 gal. of motor fuel per hour, while the Mercury powered units each consume approximately 2 gals. per hour at maximum load. Motor oil consumption is negligible; but as a matter of routine, crankcases are drained and refilled once a week.

Motors are operated at speeds ranging from 800 to 1800 r.p.m. Speed is controlled by a Pierce governor. At relatively slow speeds, the motors have a longer life; but when one wears out, it is only a matter of minutes to remove the necessary bolts, lift out the old motor and set a new one in its place.

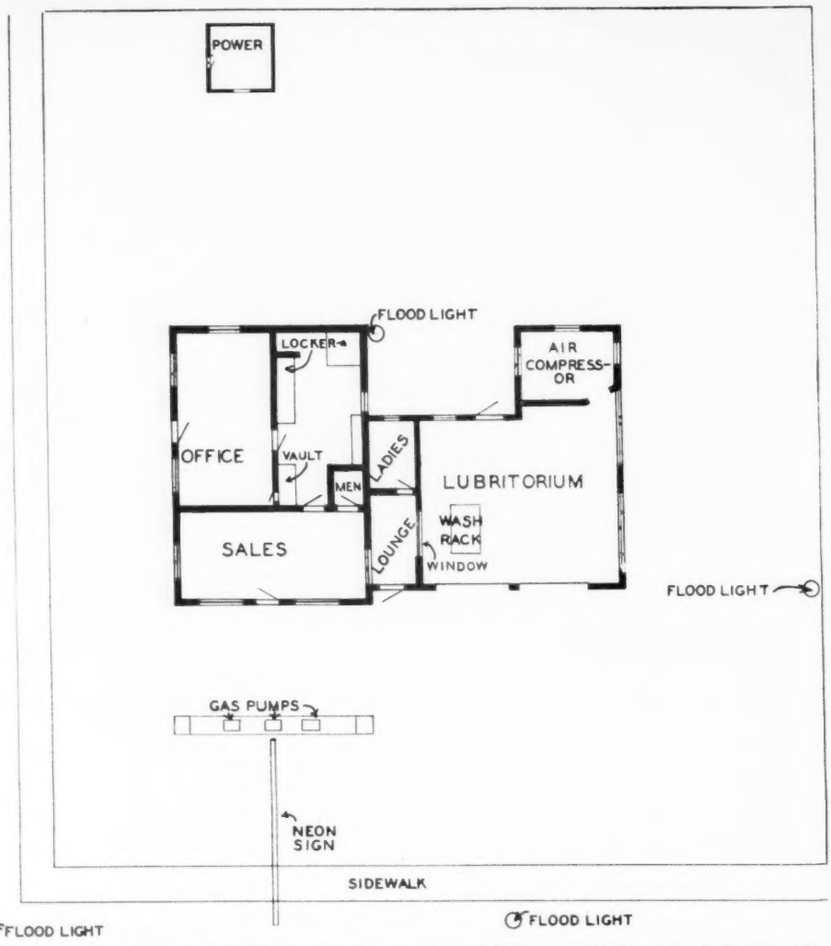
Mr. McCartney has found from experience that the engines should be operated at a temperature of at least 180°F. to prevent sludging in the crankcase. For this reason, he suggests that anyone planning a similar installation watch engine temperature closely.

From fuel and oil consumption figures given above, anyone desiring a similar installation can figure the actual operating cost per k.w. hour output. Naturally the cost varies with price of motor fuel and oil.

Mr. McCartney's new 25 k.w. unit might be used for an example: Assuming motor fuel costs him 10c per gal., and motor oil approximately 1.5 cents per hour of operation. This would give a per-hour operating cost of 21.5c on a consumption basis of 2 gals. of fuel. The unit has a maximum capacity of 25 k.w.

Thus, each k.w.h. would cost approximately 0.86c. Depreciation probably would bring this cost to a total of 1c per k.w.h.

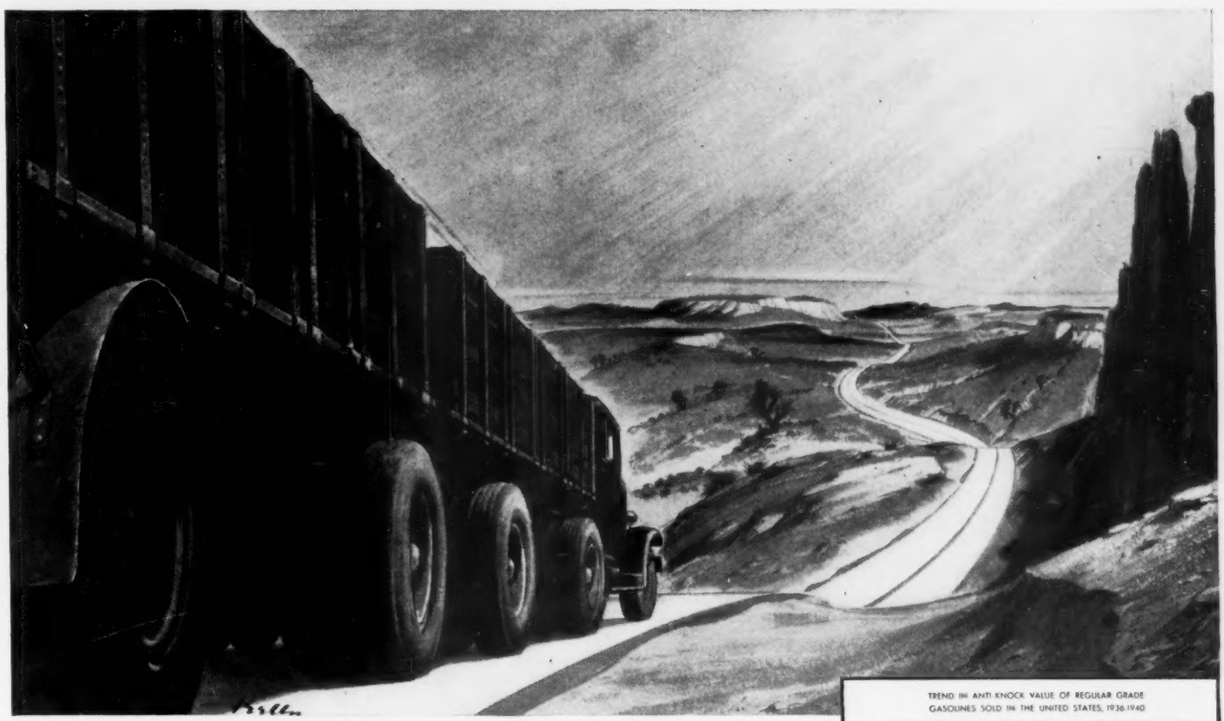
Probably there are few utility companies having that low a rate for service stations. The rate in Mr. McCartney's area ranges from slightly more than 2 to 5c per k.w. hour, depending on total k.w. hours of current used.

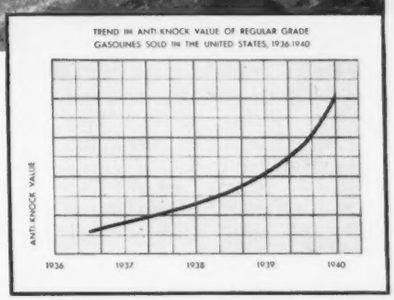


This blueprint layout of McCartney's Servicenter at 27th and Main streets, Joplin, Mo., shows Floodlights, situated so that maximum illumination is afforded. From this plan, it can be seen how lubritorium is visible from salesroom as well as from ladies lounge

TIP ON TRIP TIME

More efficient use of fuel through higher compression ratios and correct ignition timing decreases trip time 7% to 8% in 95,000-mile truck test





A TWO-YEAR SERIES of commercial vehicle tests with high and low compression ratios were recently completed at the San Bernardino, California, laboratory of the Ethyl Gasoline Corporation.

The facts regarding trip time gathered from these tests should prove of value to every fleet operator.

TEST RESULTS: With the higher compression ratio, trip time to travel identical test routes decreased by 7% to 8%; fuel consumption was reduced by 9% to 17%.

TIME-SAVING TIP: With the increase in the average anti-knock rating of "regular" gasoline today, many truck and bus operators have an opportunity to reduce time of road trips and operate more uniform schedules by:

1. Installing high compression pistons or cylinder heads (as supplied by the manufacturer) in older vehicles when engines are overhauled or rebuilt.

2. Advancing the spark as far toward maximum power as today's better gasolines will permit in vehicles with high compression engines.

3. Investigating compression ratios available when purchasing new equipment and specifying a ratio high enough to take full advantage of modern gasoline.

Increases in performance obtained in this way may also be used to haul heavier payloads and reduce fuel consumption if shorter trip times are not practical. Ethyl Gasoline Corporation, Chrysler Building, New York, N.Y., manufacturer of anti-knock fluids used by oil companies to improve gasoline.

• *For detailed information as to how the tests mentioned above were made, the routes used and the results in fuel economy and time saving, send for the new, free booklet, "Results of Recent Road and Laboratory Tests on Commercial Engines." It's yours for the asking.*

MAIL COUPON FOR TEST RESULTS BOOKLET

Ethyl Gasoline Corporation, Chrysler Building, New York, N. Y.

Please send me a copy of "Results of Recent Road and Laboratory Tests on Commercial Engines" which gives complete data on the San Bernardino tests.

Name _____

Address _____

_____

NPN-6

Interior view of ladies lounge at original Servicenter. The large plate glass window permits women motorists to watch service men at work on cars in adjoining lubritorium

Assuming that the 25 k.w. unit was operated at only one-half capacity, that is, at the rate of 12.5 k.w., the same method of calculation shows the operating cost per k.w. hour to be approximately 1.8c. As this amount of current probably would not be sufficient to give Mr. McCartney the lowest commercial rate, it can be seen that he is still saving a sizeable percentage of his light and power cost.

Station owners adopting plans explained in this article, are warned by Mr. McCartney:

"Don't do it, until you have taken pencil in hand and done some serious figuring."

Here is a simple way to go about figuring:

Take the light bills for a period of some months—a year is advisable. Tabulate in one column k.w.h. used, and in another column amount of monthly bill. Add the two columns. One will give the total k.w.h. used during the year, and the other the total amount paid. By long division, average cost per k.w.h. is obtained.

Next, figure the actual operating cost of a unit like Mr. McCartney's, based on the cost of the motor fuel and motor oil, figuring about 1 gal. of gasoline per hour for the Ford, and 2 gals. for the Mercury unit.

Compare this actual operating cost per k.w.h. with the average that has been paid. If the difference is sufficiently large to justify an initial cost of $500 to $800, "go ahead", says Mr. McCartney.

Consulting a qualified electrician at the outset is advised, to help with figuring and planning, and to handle actual installation work.

When it was decided to enlarge Economy Oil Co.'s Servicenter at 27th and Main St., and to build a new one at 7th and Harlem St.,—on U. S. Highway 66—Owner McCartney turned to his "first assistant" for designing help.

That assistant is Mrs. McCartney, who has been helping her husband manage the company for about 15 years. From experience, she knows the importance of eye appeal in a service station, and its effect on the buying power of women motorists.

THE enlargement program at the 27th. and Main streets Servicenter called for lubritorium, washroom and ladies lounge. An accompanying photograph shows an interior view of the ladies lounge, with modern furniture. A large plate glass window in the wall permits view of lubrication room.

At the new Servicenter, Mrs. McCartney ordered the installation of large plate glass windows so the motorist could see the always neatly arranged oil display in the salesroom, and give the attendant a clear and unobstructed view of the entire driveway.

Mrs. McCartney also designed a moveable partition on which to display the oils. This partition separates the salesroom from the small entrance-way to the ladies restroom. The partition, as designed, provides a private entrance to the restroom, conceals door from salesroom yet affords desired visibility from salesroom into lubritorium.

All gasoline handled by Economy Oil Co. is hauled by a company-owned transport truck from a Coffeyville, Kan. refinery, approximately 75 miles west of Joplin. The truck has a capacity of 2500 gals. In 1939, the truck made approximately 450 trips in order to supply the 6 stations with approximately 1,200,000 gals. of motor fuel sold.

Moveable partition for above oil display was designed by Mrs. McCartney, and separates salesroom from small entranceway to ladies' restroom. Partition provides a private entrance, conceals door from salesroom, yet affords desired visibility from salesroom into lubritorium

"WE NOW SELL *22 gallons*

FOR EVERY 1 WE SOLD IN 1926!

That proves folks appreciate Cities Service quality," chuckles this prospering distributor.

"When we started out with Cities Service in 1926, we had no idea it would be so easy to increase business," enthuses John Stevens, Cities Service distributor of Genoa, Ohio. "But today our annual gallonage is up some two thousand per cent.

"Credit the increase to Cities Service quality. All I have to do is to convince my customers to try products like Koolmotor Gasolene, Cities Service and Koolmotor Motor Oils and the Cities Service Power Prover and they're sold for life. And as every good business man knows, it's repeat business that holds the key to profits."

It Pays You To Sell Cities Service Products . . . AND CITIES SERVICE HELPS YOU DO THE SELLING!

All this support is yours when you sign with Cities Service:

Radio—The Cities Service Concert, radio's oldest program, thrills millions of listeners every Friday night. Lucille Manners, Frank Black, Ross Graham and Ford Bond help you sell Cities Service products.

Magazines—Cities Service's 1940 theme "HELP GIVE YOUR CAR AN EXTRA YEAR OF YOUTH" reaches additional millions of readers in the Saturday Evening Post and other well-known publications.

Outdoors—They read while they ride—and Cities Service billboards and posters attract customers at the ideal time—right when they're on the highway.

Station Signs—Striking point-of-sale posters that catch the customer's eye and suggest additional services that he may need.

Direct Mail—Cities Service's "Business Builder" is a year-round direct mail campaign that has everything—looks, hooks and selling appeal.

Folders, Matches, Maps—and other merchandising material. Each especially designed to do a selling job for you and your station.

Cash in—Think what this complete selling program can mean to your business. Why not get all the details on this money-making merchandising? Wire, write or phone to the nearest office listed below.

CITIES SERVICE OIL COMPANIES

CITIES SERVICE OIL COMPANY— Chicago, New York, Cedar Rapids, Boston, St. Paul, Grand Forks, Kansas City, Fort Worth, Tulsa, Milwaukee, Cleveland, Detroit, Syracuse, Harrisburg.

CITIES SERVICE OIL COMPANY, LTD.— Toronto, Ontario.

ARKANSAS FUEL OIL COMPANY— Shreveport, Little Rock, Jackson, Miss., Birmingham, Atlanta, Charlotte, N. C., Nashville, Richmond, Miami.

Octane Numbers in Middle West Are Catching Up with the East

Octane Number of Regular Gasolines Sold in 7 Areas, Compared With Year Ago

Area	Octane Number A.S.T.M. 1940	A.S.T.M. 1939	Research 1940	Research 1939
Atlanta, Ga.	73.8	....	79.0	....
Boston	73.8	72.1	....	....
Cincinnati	74.1	....	80.0	....
Chicago	73.6	71.1	78.9	....
Cleveland	73.6	71.5	....	....
Middle Atlantic States	74.2	71.6	....	....
Philadelphia	74.2	70.8	79.7	77.0
Average	73.9	71.4	79.9	77.0

● Major brand, regular grade gasolines now sold in Standard Oil Co. of Indiana marketing territory in the middle west, have caught up, in octane number, with those sold in the east three months ago. The average knock rating of major brands in Chicago is just under 74 A.S.T.M., and just under 79 by the Research method.

NATIONAL PETROLEUM NEWS' survey last December of motor fuels sold in the east, showed regular grade averaged 74.2 octane number, A.S.T.M. and 79.7 Research method. Nine brands sold then in Cleveland averaged 73.6 A.S.T.M. and 13 brands sold in the middle Atlantic states averaged 74.2 A.S.T.M. Details of this survey were carried in Jan. 31st NPN.

A check of regular gasolines sold by six major companies in Chicago last December showed an average octane rating at that time of 72.5 A.S.T.M. Report of this survey was published in Feb. 21st N.P.N. The newest survey made three months later, shows that octane rating of Chicago gasolines has jumped 1.6 numbers.

In December two major marketers were selling regular gasolines of less than 72 octane number in Chicago. Today only one brand is below 73 octane.

Octane ratings of premium and third-grade gasolines sold in Standard of Indiana territory also are increasing. An accompanying tabulation shows that the average octane number of 6 third-grade gasolines in March was 65.2 A.S.T.M. This is an increase of 4.1 octane numbers over February, 1939, when the average was 61.1 octane. Three of the 6 brands test 67 or above. The lowest is 60, compared with a low of 55 a year ago.

Premium gasolines sold by the same 6 companies in Chicago territory in March tested an average of 78.5 octane, compared with 77.4 octane a year ago. This increase of 1.1 numbers in the year is less than the increase in octane number in either third-grade or regular.

An analysis of 8 regular gasolines sold in Atlanta, Ga., in March gave similar results to those sold in Chicago. The average octane number was 73.8 A.S.T.M. compared with 73.6 in Chicago. Lowest octane number in Atlanta was 71 and the highest 77.5 by the A.S.T.M. method. By the Research method the average value was 79, the high 80 and the low 77.

Six regular gasolines in Cincinnati, O., tested during March showed an average octane number of 74.1 A.S.T.M. and 80 Research. Only two Cincinnati gasolines were lower than 74 Octane number, A.S.T.M. A year ago the average of the same six brands was 71, with the low 70.5 and the high 71.5.

LEAD content of the regular gasolines in the three cities reported here, was highest in Cincinnati during March, averaging 1.4 cc. per gallon in those brands containing lead, compared with 0.8 cc. for those containing lead the previous year.

In Atlanta average lead content in March, 1940, was 0.93 cc. per gallon. In Chicago the average for six regular grades was 0.75 cc., compared with 0.73 cc. in February, 1939.

Earlier Octane Surveys

Report on survey of octane ratings of regular gasolines for February, June, and December, 1939, in the following cities, were published in NATIONAL PETROLEUM NEWS issues of Jan. 31 and Feb. 21, 1940: Chicago, St. Louis, Cleveland, Middle Atlantic States, Philadelphia.

Analysis of Fuels Sold in Chicago and Other Cities

Analysis of Six Premium Gasolines Sold in Chicago, March, 1940, and February, 1939

Gasoline	Gravity °F. 1940-'39	I.B.P. °F. 1940-'39	10% Evap. °F. 1940-'39	50% Evap. °F. 1940-'39	90% Evap. °F. 1940-'39	E.P. °F. 1940-'39	Recov. % 1940-'39	Reid vapor pressure lbs. @ 100 °F. 1940-'39	Octane number A.S.T.M. 1940-'39
A	62.0 62.8	88 89	114 113	221 218	344 338	397 399	94.5 95.0	11.0 11.4	79.0 77.5
B	67.1 67.1	85 89	107 108	196 196	320 319	393 394	96.0 96.5	11.2 11.2	78.0 76.5
C	69.6 67.3	86 86	105 105	169 187	330 333	410 407	97.0 97.0	10.2 10.5	79.0 78.5
D	64.5 64.1	84 85	110 111	206 224	333 339	395 388	96.5 95.0	10.8 11.0	79.0 75.0
E	65.1 68.5	84 83	111 115	218 205	335 285	393 352	96.0 97.0	10.7 10.4	78.5 79.0
F	63.4 65.0	92 85	116 115	215 214	324 325	385 383	96.5 96.0	11.4 11.3	77.5 78.0
Average	65.2 65.8	86.0 86.0	110 111	204 207	331 323	395 387	96.0 96.0	10.8 10.9	78.5 77.4

Analysis of Six Third Grade Gasolines Sold in Chicago, March, 1940 and February, 1939

Gasoline	Gravity °F. 1940-'39	I.B.P. °F. 1940-'39	10% Evap. °F. 1940-'39	50% Evap. °F. 1940-'39	90% Evap. °F. 1940-'39	E.P. °F. 1940-'39	Recov. % 1940-'39	Reid Vapor pressure lbs. @ 100°F. 1940-'39	Octane number A.S.T.M. 1940-'39
A	63.8 63.0	88 92	124 133	231 242	333 344	388 392	95.0 97.0	11.1 10.4	63.5 63.0
B	61.6 61.0	90 88	134 131	238 236	348 342	420 410	96.5 98.0	8.4 7.7	67.5 67.5
C	67.7 63.9	85 88	111 127	199 237	354 362	424 414	96.5 98.0	11.2 9.2	60.0 55.0
D	60.0 60.5	96 94	133 119	246 236	367 360	408 414	97.0 97.5	8.5 8.1	67.0 67.5
E	65.9 65.9	86 90	111 121	214 228	339 331	404 384	96.5 98.0	10.8 9.5	66.5 57.0
F	61.8 63.9	90 94	117 129	236 239	360 350	408 398	95.5 98.0	10.3 9.5	67.0 56.5
Average	63.7 63.0	89.2 91.0	122 127	227 236	350 348	409 402	96.2 97.7	10.0 9.1	65.2 61.1

Analysis of Eight Regular Grade Gasolines Sold in Atlanta, Ga. in March, 1940

Gasoline	Gravity	I.B.P. °F.	10% Evap. °F.	50% Evap. °F.	90% Evap. °F.	E.P. °F.	Recov. %	Reid vapor pressure lbs. @ 100°F.	CC lead per gal.	Octane Number A.S.T.M.	Octane Number Research
A	62.6	96	128	227	335	392	97.0	10.3	trace	72.0	79.0
B	60.7	90	134	238	341	390	97.0	10.6	1.30	74.0	79.5
C	61.7	93	130	236	334	395	97.0	9.4	1.00	72.0	79.0
D	62.7	98	126	233	336	394	97.0	9.7	0.42	74.5	79.5
E	62.9	89	128	226	321	374	97.0	9.6	0.85	76.0	80.0
F	57.7	96	130	237	337	388	97.5	8.3	none	73.5	79.0
G	58.7	97	134	235	347	400	97.5	8.5	1.00	71.0	77.0
H	65.2	90	129	214	287	340	97.0	9.2	1.00	77.5	79.0
Average	61.5	93.5	130	231	331	384	97.1	9.45	0.93	73.8	79.0

Analysis of Six Regular Gasolines, Sold in Cincinnati in March, 1940, and February, 1939

Gasoline	Gravity 1940-'39	I.B.P. °F. 1940-'39	10% Evap. °F. 1940-'39	50% Evap. °F. 1940-'39	90% Evap. °F. 1940-'39	E.P. °F. 1940-'39	Recov. % 1940-'39	Reid vapor pressure lbs. @ 100°F. 1940-'39	cc Lead per gal 1940-'39	Octane number A.S.T.M. 1940-'39	Octane number research 1940-'39
A	63.0 60.7	90 92	122 127	226 231	333 339	387 391	98.0 98.0	10.2 10.1	1.4 0	74.5 71.0	80.5 ...
B	62.1 62.8	95 92	125 132	235 231	339 333	398 396	97.0 98.0	10.0 10.0	1.4 0.9	75.0 71.0	80.5 ...
C	61.0 60.5	90 90	124 128	221 238	347 343	408 392	96.5 98.0	9.8 10.3	0 0	72.5 71.0	79.0 ...
D	62.7 63.4	92 90	124 126	222 218	341 326	418 396	97.0 98.0	9.9 10.5	1.8 0.7	73.5 71.5	79.5 ...
E	63.5 62.7	92 96	121 134	224 230	329 333	400 396	98.0 98.0	9.8 9.2	1.1 1.0	74.5 71.0	80.0 ...
F	62.0 61.2	100 92	132 117	228 233	338 346	392 390	97.5 97.5	9.4 10.2	1.4 0.6	74.5 70.5	80.5 ...
Average	62.4 61.9	93.2 92	125 127	223 230	338 337	401 394	97.3 97.9	9.8 10.0	1.4* 0.8*	74.1 71.0	80.0 ...

*Average of brands containing lead

Analysis of Six Regular Gasolines Sold in Chicago March, 1940, and February, 1939

Gasoline	Gravity 1940-'39	I.B.P. °F. 1940-'39	10% Evap. °F. 1940-'39	50% Evap. °F. 1940-'39	90% Evap. °F. 1940-'39	E.P. °F. 1940-'39	Recov. % 1940-'39	Reid vapor pressure lbs. @ 100°F. 1940-'39	cc Lead per gal 1940-'39	Octane number A.S.T.M. 1940-'39	Octane number research 1940-'39
A	62.6 61.7	80 82	111 108	225 223	340 348	390 404	94.0 95.0	11.7 12.5	1.05 0	74.0 70.0	80.5 ...
B	65.1 65.8	84 84	105 106	204 206	333 331	398 400	96.5 97.0	11.5 11.7	0.16 0.27	73.0 70.5	79.0 ...
C	69.5 69.1	90 83	104 106	168 181	336 323	410 395	92.0 97.0	11.7 11.4	1.01 0.68	75.0 72.0	79.0 ...
D	64.3 64.1	86 87	109 112	217 227	329 337	390 388	94.5 96.0	11.6 10.8	0.14 1.20	72.0 71.5	78.0 ...
E	66.9 63.3	89 84	112 114	208 231	331 347	406 402	97.0 97.0	10.8 10.1	1.89 1.54	75.0 72.0	79.5 ...
F	64.3 65.5	83 84	113 110	215 214	332 329	394 386	96.0 96.5	10.3 9.9	0.35 1.08	73.0 70.5	77.5 ...
Average	65.5 64.9	84 84	109 109	216 217	337 336	398 396	95.8 96.4	11.3 11.1	0.75 0.73	73.6 71.1	78.9 ...

"REGULAR" Is Ohio Farmer's Choice For Tractor Fuel

Use of tractors on small farms is rapidly becoming widespread. Recent survey of Ohio farmers shows "Old Dobbin" as outmoded for farm power as he is for road travel. Survey also shows farmers to be increasingly good market for petroleum products

HIGH compression tractors, using regular grade gasoline as fuel, constitute 43% of the number of tractors on Ohio farms.

New tractors bought in this state will be predominantly of the high compression, automotive type.

Passenger cars are owned by 91.8% of Ohio farmers, and nearly a third of these are 1936-37 models.

Sixty per cent of farmers have their cars greased at oil company service stations, and 45% of those who patronize service stations go to those of their local dealers.

These are conclusions in a recent survey conducted by the Cleveland publication, The Ohio Farmer, to ascertain extent of ownership of tractors, trucks and passenger cars on Ohio farms, as well as the grade and brand of fuels and lubricants bought. The publication sent questionnaires to its subscribers in each of the 88 counties in the state and received 1054 detailed replies.

In digging into the buying habits of Ohio farmers, the survey brought out that, for tractor fuels and lubricants, the brands of the Ohio Farm Bureau were more widely used than those of Standard Oil Co. of Ohio, the leading distributor among oil companies. In buying motor fuel and lubricants for trucks and passenger cars, however, the Sohio brands outranked those of the Farm Bureau.

To the first question in this survey, "How many tractors do you own?" farmers replying gave a total of 570. Different makes numbered 31, with one tractor manufacturer having a 36.3% representation.

While the majority of the farmers who stated that they were tractor owners, maintain only a single tractor, 57 reported owning two tractors; eight own three tractors; and one owns four tractors. The percentage of farmers who answered this question and who own tractors was 54.1%.

In reply to "What compression?", the following tabulation gives percentages:

High	42.9%
Low	55.9%
Medium	.2%
Don't know	1.0%

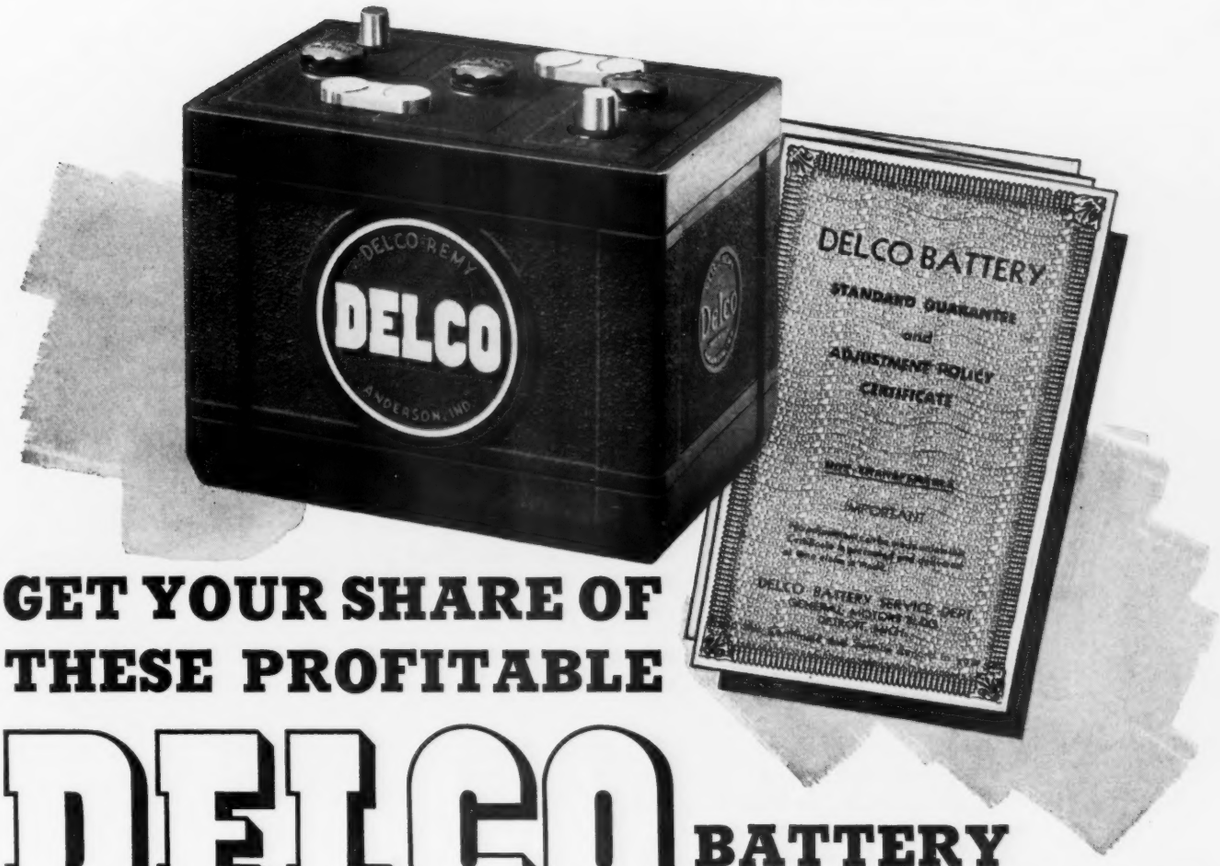
Concerning the compressions of new tractors which farmers might buy, the numbers are in percentages:

High compression	36.2%
Low compression	8.9%
Compromise	2.6%
Distillate	8.5%
Diesel	2.2%
Undecided	26.5%
Do not expect to buy	17.6%

While the majority of farmers used regular gasoline, percentages were broken down as follows:

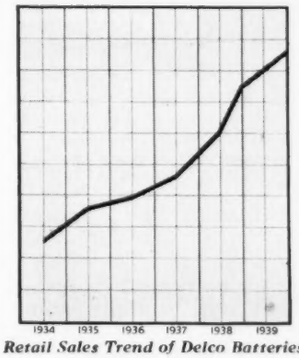
Regular	77.5%
Ethyl	3.2%
Third Grade	5.8%
Kerosine	20.4%
Distillate	10.8%
Diesel fuel	.5%

Among remarks made about this question, were: "Regular 'gas' to



GET YOUR SHARE OF THESE PROFITABLE

DELCO BATTERY REGISTRATIONS



Retail Sales Trend of Delco Batteries

Every person who buys a new car equipped with a Delco battery—and that means 40% of all new cars sold—must register his battery with a Delco battery dealer to validate the guarantee. When *you* take on Delco batteries, this registration plan brings you *automatically* a live, constantly increasing market of new contacts and customers. It is a market that not only increases your replacement battery business, but also boosts the sales of *all* your services.

Besides the registration of Delco batteries on new cars, every Delco replacement battery you sell is registered in your name. Customers respect this way of doing business, and you build up a profitable list of satisfied customers for your station.

The Delco Battery Registration Plan is your key to the huge volume of cars that come equipped with Delco batteries. No other battery can offer this *plus* advantage. There is a complete line of Delco batteries for passenger cars, commercial vehicles and tractors.

UNITED SERVICE MOTORS

For complete information about becoming a Delco battery dealer, ask your nearest United Motors Service distributor, or write direct to United Motors Service, General Motors Building, Detroit, Michigan.

Delco-Remy

ANDERSON, INDIANA

World's Largest Manufacturer of Automotive Electrical Equipment

start, until motor is warm enough for kerosine"; "Regular gasoline and kerosine—half and half"; "Regular in winter, distillate in summer"; "Regular in summer, Ethyl in winter".

Concerning the brands of fuel used in tractors, only 412 farmers answered this question, and 94.1% replied "regular". Broken into percentages, the following was shown:

Farm Bureau	24%
Standard Oil	18.2%
Nine other large oil companies	46.9%

From these figures, it may be seen that 65.1% of the gasoline used was the brands of 10 large oil companies.

The brands of lubricants used in tractors were:

Farm Bureau	21.3%
Standard Oil	13.8%
Ten other large oil companies	44.9%

Thus, brands of 10 large oil companies are supplying 58.7% of the lubricants Ohio farmers use.

Following the questions about tractors, this survey concerns itself with farmers' trucks. And of the farmers answering this question, the total number of trucks owned totaled 268.

While 236 own one truck, 26 own two trucks, one owns three trucks, three own four trucks, one owns five trucks, and one owns 10 trucks. Those owning no trucks numbered 534. Twelve different makes were represented.

Types of fuels used in these trucks, as reported in the survey were:

Regular	96.2%
Ethyl	3.7%
Third Grade	.7%
Diesel	.4%

Brands of fuel used in trucks were:

Standard Oil	23.5%
Farm Bureau	20.8%

About 50% used major oil company brands, aside from Standard Oil and the Farm Bureau. Practically the same percentages hold true for motor oil.

The total number of passenger cars owned by farmers answering the question "How many passenger cars do you own?", was 968. Broken down into the number of cars per farmers, figures are:

1 car	864
2 cars	97
3 cars	4
4 cars	3

These figures show that 91.8% own passenger cars. Thirty-seven different makes were represented, with two popular makes running a close race: 29.2% and 29% respectively.

The "vintage" of the passenger cars on Ohio farms ran from 1921 to 1940. The percentage of cars owned, and the model years were:

1940	3.9%
1939	5.7%
1938	6.3%
1937	19.7%
1936	13.4%
1935	8.6%
1934	6.8%
1933	3.5%
1932	3.3%
1931	6.5%
1930	7%
1929	8%

Of the farmers reporting the grade of fuel they use, 93.6% preferred regular, and 10.6 said Ethyl. Those using third grade averaged less than 1%.

Concerning the brands, 900 answered, which is 93% of the 968 who said they own cars. The distribution by brands was as follows:

Standard Oil	25.2%
Farm Bureau	15.3%
Ten other large oil companies	49.2%

The frequency with which Ohio farmers change their oil differs almost as much as the makes of cars they own, as the following tabulation shows:

500	miles	Less than 1%
600	"	" " "
750	"	" " "
1000	"	57.2%
1500	"	26.6%
2000	"	11.3%
3000	"	1.3%

Some farmers said that they never change, just keep adding. Others stated that they changed twice a year, some twice a month, and others didn't know.

As to where Ohio farmers go for the greasing and servicing of the cars, the following percentages were compiled:

Service stations	60.1%
At home	36.6%
Car dealers	24.3%

Two replies were given to this question by 181 subscribers, and three replies were given by 11 subscribers.

Farmers having their cars greased at service stations, were asked at what stations, and 462 answered this question:

Local dealers	44.8%
Standard Oil	18%
Ten other large company stations	27%

The brands of special winter protection, i. e., anti-freeze, numbered 46, with one widely-advertised brand getting 25.6% of the business.

The total number of miles which farmers in this survey, drove their cars during the past year, averagel 7807.6 miles. The longest single trip taken by these Ohio farmers averaged 464 miles, with individual trips ranging from 150 to 10,500 miles.

The last question on this survey was "On the longest trip which you took in your car this past year, what was your destination?" To this question, destinations of Ohio farmers covered the entire country, from the Atlantic to the Pacific, and from Texas to Canada. While 25 reported having visited New York, only one said he traveled to California. The most popular states were Pennsylvania, Indiana, and Michigan.

According to "The Ohio Farmer", farm residents in this state drove their cars 1,113,145,147 miles during the past year. Assuming that each car went 15 miles on a gallon NPN figures that 74,209,676 gallons of gasoline were consumed. Assuming that the gasoline was priced at 15 cts. a gallon, $11,131,451 was spent by 142,572 auto-owning Ohio farmers. However, it should be remembered that only 1054 farmers answered this questionnaire and that 1,113,145,147 miles represents mileage in passenger cars alone.

Additional information on this survey may be obtained by writing to The Ohio Farmer, 1013 Rockwell Ave., Cleveland, O.

Salon for Photographs On Oil at API Meeting

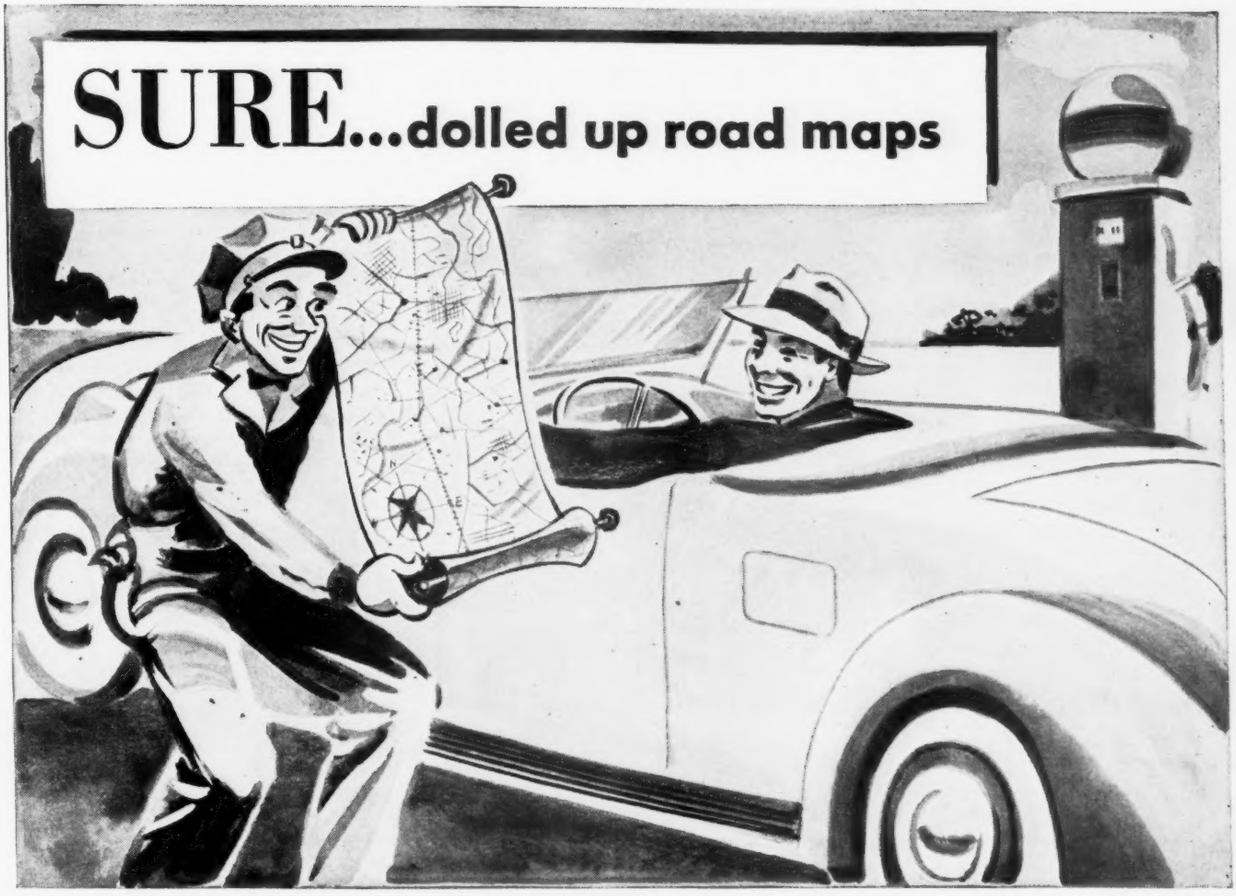
When the Petroleum-Industry Photographic Salon meets Nov. 11-15 at Chicago's Hotel Stevens, art will be the subject—but not the high-brow art which gaily labels a lopsided cube of tin "Sorrow in a Sand Storm," rather than a plain mess.

Sponsored by the American Petroleum Institute's Committee on Public Relations and the Photographic Society of America, the purpose of this salon will be to encourage pictorial photography in the picturesque oil business.

Selecting art as its subject because of its importance to the mechanized civilization, this art salon will contain prints from many oil company camera clubs as well as from photographers throughout the country.

Suitable awards will be given to those submitting the best photographs. Members of the advisory committee, which will make these awards, are: Chairman, John C. Day, Tulsa, Western Petroleum Refiners Ass'n.; K. E. Cook, New York, Standard Oil of N. J.; C. C. Herndon, Tulsa, Skelly Oil Co.; Leonard Timbs, New York, National Supply Co.; Eben Griffiths, New York, Socony-Vacuum Oil Co., Inc.; Robert Y. Ritchie, New York, commercial photographer; Philip C. Humphrey, New York, The Texas Co.; Victor H. Scales of the API staff.

Oil man member representing the Photographic Society of America is Sydney E. Smith, St. Louis, Shell Oil Co., Inc., a prominent amateur photographer.



BUT... *be sure to have the MOTOR OILS they want*

ATTRACT business every way you can—and more power to you! But remember frills aren't what you're selling. Good products make the *profits.*

Pennsylvania Motor Oil, for instance.

The customer for Pennsylvania is as generous as a buyer, as he is smart in his buying. He not only buys more oil but he treats his car right in other ways.

High grade gas, frequent grease jobs, accessories and so on—are things he buys where he buys his oil.

These facts are based on information from new emblem Pennsylvania dealers—many of whom report sales increases up to 50% on gas alone.

Learn more about the power of emblem Pennsylvania Motor Oils as a station business booster. Talk to our field representative or write us at headquarters.

PENNSYLVANIA GRADE CRUDE OIL ASSOCIATION

OIL CITY, PENNSYLVANIA

BETTER OILS FROM THE GROUND UP!

This Diesel locomotive of the B. & O. set a record for continuous railroad engine performance, by hauling the Capitol Limited, of 11 to 15 pullmans, 772 miles between Washington and Chicago for 365 days without a break. Total mileage was 280,000, and average speed was more than 56 miles an hour. The engine is a 3600-horsepower unit built in 1938. High efficiency of Diesel-powered locomotives in passenger and switching service forecasts their greater use in this field

Diesel Fuels and Lubricants

By L. C. Welch

Standard Oil Co. of Indiana, Chicago

Presented before Central Regional Committee, API marketing division, Chicago, April 22

Light Heating Oils Specified As Fuel for High Speed Diesels

● The practice is growing of using as fuel for high speed Diesel engines the light grades of domestic heating oils. This is simplifying the oil marketer's problem of handling both fuels, and also will make high speed Diesel fuel generally available throughout the country, L. C. Welch, Standard Oil Co. of Indiana, Chicago, told the central regional committee of the API marketing division, in Chicago, April 22.

There is a growing tendency on the part of builders of the high speed Diesel engines to specify fuel on the basis of the light heating oil grades, he said, since it is now recognized that the emphasis on fuel quality should be on cleanliness rather than on viscosity.

The market for Diesel fuels today, for both heavy duty and high speed engines, is placed at 35,000,000 bbls. a year and for lubricants at 650,000 bbls. a year. Increased use of Diesel engines was predicted but Mr. Welch said he disagreed with some estimates made that, by 1950, sales of Diesel fuel would equal 25% of gasoline requirements.

Trends in the application of Diesel engines to bus and truck, passenger car and airplane service were also discussed.

DURING the ten years from 1929 to 1939 the aggregate horsepower of Diesel engines in service in this country increased more than three-fold.

The attached table shows Diesel horsepower sales to 1939 and the estimated sales for 1940 and 1950. During the 10-year period from 1929 to 1939, the aggregate horsepower of Diesel engines in service in this country has increased more than three-fold. Total sales of Diesel horsepower from 1915 to 1929 were 3,181,000; from 1930 to 1939 were 10,750,000 horsepower and total sales to Jan. 1, 1940, were 13,886,000 horsepower.

Prior to 1929, Diesel engines had been developed principally as heavy duty, slow speed units for stationary and marine applications. A very small percentage of the total horsepower built was of the high speed type, adaptable to automotive service. The in-

Diesel Sales, 1929-1939
In Horsepower Per Year

	Horsepower
1929	410,000
1930	375,000
1931	280,000
1932	100,000
1933	275,000
1934	750,000
1935	1,200,000
1936	1,850,000
1937	2,075,000
1938	1,600,000
1939	2,200,000
1940 (Est.)	2,800,000
1950 (Est.)	4,800,000

*From Diesel Power.

creased demand for Diesel engines, particularly the higher speed units for application to new uses, has resulted in important improvements in their general design and manufacturing technique.

The early slow speed, heavy duty engines were of necessity designed to operate upon then available fuels, since they were required to compete with the steam engine which employed low priced coal or the cheap bunker oils. The early manufacturers of Diesel engines offered as their strongest argument in favor of this new engine the statement, "a Diesel engine will burn anything that will flow through a pipe." This statement was, of course, not true although many low speed engines will burn an extraordinarily wide variety of fuels.

In an effort to improve the power weight ratio, the early twenties saw an increase in the maximum top speeds of Diesel engines from approximately 200 RPM to about 500 RPM. The next important development was the commercial application of the medium speed Diesel engine to contractors' equipment and to tractors. This was followed shortly by the development of high speed Diesel engines as power units in truck operation. While the first application of high speed Diesel engines to buses in this country occurred during 1930, this was entirely experimental. It was not until 1936 that the necessary flexibility to compete with the spark ignition engine in this type of service was attained.

Fuels

As previously pointed out, the early, low speed Diesel engines had to compete with low cost, steam engine operation and fortunately could burn heavy, low grade fuel oils. Because of the necessity for using such fuels, the earliest successful Diesel engines employed air injection. As long as it was necessary to use an air injection system because of available fuels, the development of the Diesel engine was

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limited to slow speeds, high weight per horsepower, and large size units.

The demand for higher speeds and lower engine weight per horsepower resulted in the development of the mechanical injection system, which necessitated fuel quality improvements. These engines also used comparatively heavy fuels, but fuel cleanliness became an important factor as excessive quantities of water and sediment could not be tolerated. Continued development of mechanical injection systems and the demand for improved engine performance resulted in a market for special Diesel fuel oils. The petroleum industry, appreciating the specialized market being made available to them, responded by offering several different grades of Diesel fuel oil.

The continued development of fuel injection systems resulted in several different designs. Further engine improvements brought about new combustion chamber designs, higher compression ratios, and higher engine speeds which required an increase in injection pressures. These were obtained by using closer clearances and providing better metering in injection equipment, which resulted in the need for lower viscosity and cleaner fuels.

Later development of high speed Diesel engines and their application to truck and bus service has resulted in even more rigid requirements for satisfactory fuels, and at present a supplier of Diesel fuel may find it necessary to meet specifications on:

1. Cetane.....ignition quality.
2. Water and Sediment cleanliness.
3. Ash....abrasive characteristics.
4. Flash..to meet local ordinances.
5. Viscosity....to provide lubrication or prevent excessive pump losses.
6. Pour....to permit handling at low temperatures.
7. Distillation....to provide clean combustion.
8. Sulphur.....corrosion possibilities.
9. Alkali & Mineral Acid....corrosion possibilities.

Fortunately, it is seldom, if ever, necessary to meet specifications on all of the above characteristics. In general, one of the ASTM Diesel fuel oil classifications will provide specifications suitable for any individual engine. There is a growing tendency on the part of Diesel engine builders to specify fuel on the basis of burner fuel classifications, which greatly simplifies the problem of tank wagon distribution and makes high speed Diesel fuel generally available throughout the entire country. Until recently, such recommendations were not generally made because of the popular belief that a minimum fuel viscosity of 35 seconds at 100° F. was necessary to provide fuel pump lubrication. However, this idea has been refuted and today the emphasis is placed on fuel cleanliness rather than viscosity. Special Diesel fuels will probably continue to be necessary for city bus operation because of local smoke ordinances, but such operations are usually served by tank car, and the problem is entirely one of manufacture and not distribution.

However, the situation today is that, as a result of all of this, many of us are offering, in addition to the heavy fuels applicable to slow speed air injection engines, several fuels for the high speed engines which may come in the following general classifications:

Type of Engine	
Low Speed Engines	
	Low Pressures Low Temperatures
Medium Speed Engines	
	Higher Unit Pressures Higher Film Strength Stability against Oxidation at Higher Temperatures
Present High Speed Units	
	Still Higher Unit Pressures Higher Film Strength High Stability and Possibly Detergent Action

High Speed Diesel Fuels	Clean High Viscosity—37-42 High Cetane..50 Min.
Furnace Oil Type	Clean Lower Viscosity—33.5 Cetane high, but lower than high speed.
Light Diesel Fuel	Kerosine type. Viscosity .....32 Cetane .....50 Min.

Lubricants

During the early development of Diesel engines, lubrication was not considered a great problem, as these engines operated at comparatively low pressures, low speeds—with light loads which resulted in lower temperatures, and in addition, overhaul periods were frequent. Further developments and the demand for greater availability of Diesel engines disclosed that lubricating oils had a definite effect on volume and type of piston deposits, and it was learned that oils with high thermal stability were needed for these engines, even with a sacrifice in good oxidation stability, if necessary.

There is considerable difference of opinion as to the required characteristics of lubricants suitable for high speed Diesel engine service. This has resulted in various claims for an individual product, which may include all of the following—with one or more of the qualities emphasized:

1. Low carbon-forming tendencies.
2. Stability against oxidation at high temperature.
3. Non-corrosiveness to engine bearings.
4. High oiliness, or superior wetting ability.
5. High film strength.
6. High detergency, or ability to wash out and carry deposits in suspension.

In Diesel engine lubricants it is desirable to incorporate low carbon forming tendencies, high oxidation stability, and non-corrosive features; however, there may be some differences of opinion as to the necessity of including unusually high oiliness, film strength, or detergency. It appears that the trend in high speed Diesel engine lubricants will be toward a high stability, inhibited lubricant—with or without detergent additions.

The plan generally followed in meeting this situation has been somewhat as follows:

Type of Diesel Oil
Naphthenic Base Distillate Type Oils
Naphthenic Base Stocks to which inhibitors are added for improved stability.
Greater use of Paraffinic Base Stocks to which oxidation inhibitors have been added and in many cases detergents.

Diesels in Buses and Trucks

Prior to 1936 there were very few commercial Diesel powered vehicles in use in the U. S., as compared to other countries which have had a greater incentive to Dieselize due, mainly, to higher cost of gasoline. The use of Dieselized commercial highway vehicles has shown a steady increase. No accurate figures are available for 1939; however, in 1935, .04% of the commercial vehicles in use in this country were Diesel-powered, and at the end of 1938 this had increased to .015%, and it is safe to assume that this figure is now slightly over 0.2%. How long this rate of increase will continue is difficult to predict. We can be assured, however, that there will be no appreciable increase in the present rate of expansion due to:

1. The uncertain advantages of the Diesel over the gasoline engine in certain types of service.
2. The inability of the industry to produce units at a sufficiently high rate.
3. Economic, mechanical, and human factors—which can and may exert a tremendous influence on future expansion.

An important factor in trucks of 2.5 tons and under, and even in larger size units, is the greater cost of the Diesel as compared to the gasoline engine of equivalent power. It is evident that intensive use must be made of Diesel equipment to justify this additional first cost on the basis of anticipated savings in fuel bills. In other words, operators must be reasonably assured of savings before Diesel conversion is even considered. Thus, only on vehicles operating with practically continuous schedules can the Diesel be economically justified. Due to the fact that Diesel engines operate best and most economically when heavy loads are maintained for long periods of time, and where rapid acceleration is not essential, they are especially suited for transportation in hilly or mountainous country. It therefore follows that in city use, where heavy

loads cannot be maintained for long periods and rapid acceleration is essential, and extensive periods of idling cannot be avoided, the use of this type of engine in light trucks does not compare favorably with the gasoline engine.

Truck and bus registrations for the past 10 years show that the number of such units over 2.5 tons does not exceed 5% of the total number in service. Assuming that all such units could be economically Dieselized, the total number would not exceed 210,000 units. At present production rates, which are approximately 3000 to 4000 truck and bus Diesel engines per year, it would require 60 to 70 years to replace the gasoline engines in these 210,000 vehicles.

OPINIONS have been advanced that with the entrance of some of the large automotive companies into this field, production in the next two or three years will increase 50%. If this should take place, which is doubtful, it would still take many years to replace the 210,000 gasoline units. If a great increase in demand developed for truck and bus Diesels, the industry could undoubtedly expand its present capacity to produce sufficient engines to Dieselize possibly 15% of all commercial vehicles in the next 10 to 15 years. It is not likely that such rapid expansion will take place, due to other economic, mechanical, and human factors which will act as effective brakes, making it logical to assume that the volume demand for Diesel fuels from this source will not constitute a large portion of commercial equipment fuel requirements for many years to come. Some of the reasons for this are:

1. The future trends in Diesel fuel costs as affected by increased demand, taxation, improvement in fuel quality, etc.
2. Trend in Diesel engine versus gasoline engine cost.
3. Trends in Diesel and gasoline design as influencing improvements in operation and fuel economy, in particular, the trend toward increased compression pressures in gasoline engines.
4. Development of adequate fuel supply and convenient low cost methods of distribution.
5. The attitude of public officials toward Diesel operation on highways, city streets, etc., and highway vehicle size and weight restrictions.

It is difficult to predict just what effect these factors will have in limiting the use and expansion of Diesel equipment in commercial vehicles. There is no question that it has and will continue to influence future trends.

Mr. Fowler, advertising manager for General Motors, Diesel Engine Division, stated recently that in the last two years his company had supplied Diesel engines for 800 buses. There are no accurate figures available on bus installations to date; however, in the light of Mr. Fowler's figures and other data, then there are now approximately 1000 Diesel powered buses operating in the U. S. This is not a very impressive figure when compared to the situation in England, where the Diesel has practically replaced the gasoline engine in bus service. Even though there is little difference between the price of gasoline and Diesel fuel in England, the Diesel engine is still favored because its fuel consumption is 40% less. Fleet operators in this country claim that for buses of equivalent size and capacity, the gasoline unit averages 3.5 to 6.0 miles per gallon, as compared to 7.5 to 9.5 miles per gallon for the Diesel driven vehicles.

Although the number of Diesel buses in operation in this country is insignificant as compared to the number abroad, there is no denying the increasing popularity and importance of this type of Diesel use. From all reports, the Diesel buses now in operation are giving satisfactory service and finding ready acceptance with the riding public. Many of these buses are operating on light Diesel fuels, products made especially for city operation, where a smoke-free exhaust is demanded. One operator using this type of fuel is obtaining 5.5 miles per gallon where formerly, with gasoline engine powered equipment, 3.5 miles per gallon was considered good.

From all indications, the application of Diesel power to bus service seems to be well under way in this country, and the outlook for the future seems very promising. The increase in demand for quality fuels, which will naturally follow, clearly indicates the desirability of giving increased attention to this expanding market.

Diesels in Passenger Cars

The use of Diesel engines in passenger cars, as automobiles are built and used today, appears to be very distant. In order to be reasonably successful from a sales standpoint, mass production proportions would have to be reached, or the price would make the purchase of such a car prohibitive for the average car owner.

At present the personnel required to give service to such cars is not available, and men would have to be trained and educated in the care and maintenance of Diesel engines in proportions nearly equal to the number now available for gasoline engine repair and service, in order to make the manufacture and sales of such cars practical.

To give good service to a car owner, which is necessary if this type of car is to become popular, the small out-of-the-way service station as well as the larger ones in the cities must handle Diesel fuel, and personnel must be trained to give other necessary service. Obviously it would not be practical to provide such facilities until a substantial number of Diesel powered passenger cars are in service.

Diesel passenger cars, when put into the hands of every type of owner, operated under all conceivable conditions and subjected to abuse and neglect, must be as highly developed as the gasoline engine now is. The Diesel engine does not as yet enjoy this reputation; therefore, the extent of repairs and service would be much greater and more costly than with the present automotive engine.

From the mechanical standpoint, some difficulties, which it is doubtful the motorist would tolerate, must be expected. The motorist has learned to expect his engine to start after standing outside for several hours in weather below zero. His present gasoline engine will do this, whereas the Diesel engine will not start under such conditions.

It is very doubtful whether the motorist would accept a car which would subject him to so many inconveniences, since he has been led to expect quick starting under all conditions, good repair and maintenance service, and trouble-free operation with a minimum of attention—all of which he now has, but would not have with a Diesel powered automobile.

These problems will eventually be eliminated—just as similar ones were eliminated during the development of the gasoline engine; however, such development will not take place in the immediate future as the educational work required among users and service personnel to eliminate many of the present problems, as well as the experimental work necessary to give successful Diesel passenger car operation, is a long, slow process.

In view of the present status and future possibilities of the entire Diesel passenger car field, it is the writer's opinion that the petroleum industry need feel no concern over supplying fuel for this type of vehicle for the next few years.

Diesels in Airplanes

In considering the probable future of the Diesel engine as compared to the gasoline engine for aviation purposes, we find that the immediate future of Diesel engines for this type of service is rather doubtful. There has been more incentive for Diesel development and utilization abroad, where high octane aviation gasolines are not plentiful and consequently wid-

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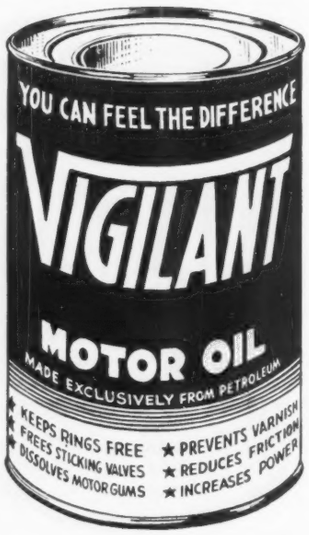

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er differentials exist between the cost of Diesel fuels and gasoline. Some foreign countries, especially Germany, are well advanced in their work on this development. It has been claimed that the German airplane Diesels have been very successful, but the latest information contradicts these claims. It is reliably reported that the gasoline powered American made planes have proved their superiority over the Diesel powered planes on the Western and Russian fronts.

Much can be said for the advantages of the Diesel engine in aviation. The low cost Diesel fuel compared to the cost of high octane gasoline, the reduction in fire hazard, plus the added safety in military ships from the effects of machine gun fire into gasoline tanks—are all more than enough to warrant continued development work on this type of service. Some experimental and development work is now being done, chiefly by various departments of the government, but practically none by private industries.

With the present large demand for aircraft engines, manufacturers are concentrating their efforts on improvements in gasoline engine designs. It is safe to assume that the advent of the Diesel aviation engine for commercial use in this country is at least five years away, and probably closer to ten years—depending a great deal upon the duration and extent of the war in Europe. If and when it does become necessary to provide fuel for this type of Diesel engine, a high cetane number product will be needed, and exceptionally low cloud and pour points will be required to prevent wax separation and clogging of fuel filters; in other words, fuel similar to that now specified by the Navy for Diesel aircraft engine test work. It is therefore logical to suppose that an increase in the demand for high quality Diesel fuel from this source will not occur for several years.

Diesels in Locomotives

The growth of the Diesel engine in railroad service has been very rapid since the first two streamlined Diesels were delivered to our American railroads in 1934. While considerable attention has been called to the use of Diesels for streamlined trains, of which there are at present about 75 in this country (68 of which are the product of one manufacturer), the use of Diesel locomotives for switching service has increased even more rapidly. It is estimated that there are at present about 525 such units in this country (375 of which are the product of one manufacturer).

It has been authoritatively stated that adaptability and the general economy effected by the use of Diesels for switching engines indicates that no more steam locomotives will be purchased by railroads for switching service. To date, Diesel locomotives have not been adopted for freight service, although great progress has been made and, without doubt there will be an increased use of Diesel powered locomotives for freight service as soon as railroads have made the necessary revisions in their operating conditions.

Summarizing, before concluding:

1—Since 1920, through 1939, over 13,000,000 Diesel horsepower have been installed in the U. S.

2—Over 1,500,000 Diesel horsepower were installed in 1938.

3—Over 2,000,000 Diesel horsepower were sold in 1939.

4—It is estimated that 2,800,000 Diesel horsepower will be installed in the U. S. in 1940.

5—A conservative estimate would indicate there are today in the territory in which we (Standard of Indiana) are marketing some 3,250,000 Diesel horsepower.

6—Figures which are extreme estimates, indicate potential business as follows:

Potential in the Territory in Which We Market	
Horsepower	3,250,000
Diesel Fuel	7,750,000 to 8,000,000 bbls.
Diesel Engine Oil	150,000 bbls.
Potential, Whole U. S.	
Horsepower (Jan. 1, 1940)	14,376,000
Diesel Fuel	35,000,000 bbls.
Diesel Engine Oil	625,000 to 650,000 bbls.

Conclusions

A continued increase in the demand for Diesel engines from year to year will depend upon an adequate supply of suitable fuel at reasonable prices. For this reason the future success of the high speed Diesel is a joint responsibility of the refiner—for the production of high quality, reasonably priced fuel, and the engine designer—in producing an engine that will operate successfully on available fuel oils, such as the domestic burner oil grades which are now generally distributed.

Diesel engines in general now give very satisfactory performance on domestic burner oils, but if all makes could use such fuels the operator's problem of obtaining suitable fuel and the refiner's or their distributor's problem of having to carry several kinds of fuel in stock, would be eliminated. No matter what the refiner may have at the refinery, he cannot put several grades of fuel in every service station, nor in every wholesale outlet.

It has been fairly well proved that practically all high speed Diesels can be operated satisfactorily with one of two grades of fuel—either a light distillate or a somewhat heavier fuel—the selection to be left, to some extent, to the consumer. It should be but a matter of time before the consumer has some very definite ideas concerning the fuel to use.

It has been estimated that by 1950 the sale of Diesel fuels will equal 25% of the total gasoline requirements, provided gasoline and Diesel fuel demands increase along present trend lines. However, this trend indication, influenced by Diesel developments during

the past few years, is undoubtedly misleading, considering the limitation of Diesel engine applications mentioned in this paper.

Although the present trend indication seems unduly optimistic, the continued increase in the use of Diesel engines will be reflected in greater demands for suitable fuels. This will be of particular significance in connection with the high speed Diesel fuels, considering that there will also be an increasing demand for similar type fuels to be used in domestic burners. The petroleum industry should anticipate this demand, and to facilitate distribution, should make every effort to supply the minimum number of products that will provide satisfactory service in both types of equipment.

Holds Dieselization Of Rails Practical

Extensive use of Diesel locomotives in freight service was forecast by R. K. Evans, vice president of General Motors in charge of Diesel development, at ceremonies at Omaha inaugurating the Burlington's newest streamlined train. He described a new type locomotive which has been in service for 5 months on various railroads in this country.

"This new pioneer is a freight locomotive, so flexible and powerful as to be economically applicable to every kind of freight service," he said. "There is good reason to believe that the application of Diesel power to freight service is of even greater significance than in passenger and switching service.

"Contrary to the somewhat widespread public impression that Diesel power is only applicable to light, high speed trains, it can now be said that the important economies incident to Diesel operations are of even greater value in handling heavy duty jobs."

With Diesel locomotives now accepted for passenger and switching service, their use in hauling freight trains would make practical complete Dieselization of railroad motive power, said Mr. Evans.

TRADEMARKS

The following are trademark applications pertinent to our field pending in the United States Patent Office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Munsey Building, Washington, D. C., trademark specialists.

BU-CAN-SE, Ser. No. 428,056.
The Refinery Supply Co., Tulsa.
Filed Jan. 30, 1940.
For apparatus to contain liquefield gas and display its change from liquid to gaseous state.
Published April 2, 1940.

ECONOMO, Ser. No. 426,615.
Green Brothers, Incorporated, Norfolk, Va
Filed Dec. 15, 1939.
For gasoline.
Published April 2, 1940.

M C S, Ser. No. 427,823.
Sinclair Refining Co., New York.
Filed Jan. 24, 1940.
For Insecticides.
Published April 2, 1940.

M H, Ser. No. 427,824.
Sinclair Refining Co., New York.
Filed Jan. 24, 1940.
For insecticides.
Published April 2, 1940.

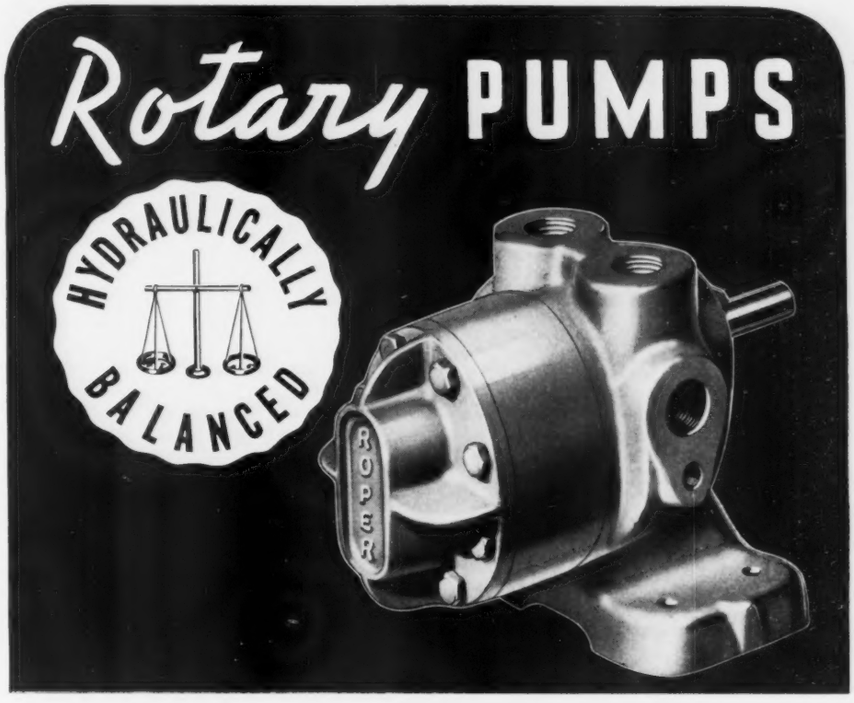
FLORIGEL, Ser. No. 428,310.
Floridin Co., Warren, Pa.
Filed Feb. 7, 1940.
For processed clay and more particularly Florida Fuller's earth used in drilling oil wells.
Published April 16, 1940.

OILIT in fanciful design, Ser. No. 428,292.
Penn-O-Tex Oil Co., Minneapolis.
Filed Feb. 6, 1940.
For lubricating oils and greases.
Published April 16, 1940.

EVEREADY BUTANE GAS SYSTEM, Ser. No. 427,696.
Charles J. Bender, Dallas, Texas.
Filed Jan. 22, 1940.
For butane gas storage and dispensing units, including tanks, valves, and fittings assembled in connection therewith.
Published April 16, 1940.

KLIP, Ser. No. 428,178. Stanco Incorporated, Wilmington, Del. and New York City. Filed Feb. 2, 1940. For insecticides and fungicides. Published April 23, 1940.

EXTONE, Ser. No. 428,383. Extone Oil Corp., Chicago. Filed Feb. 9, 1940. For lubricating oils. Published April 23, 1940.



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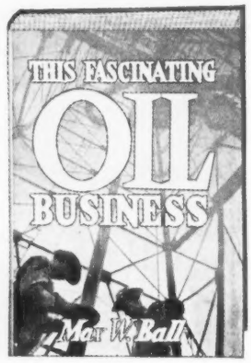

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Max W. Ball, author, has been associated with the oil industry for 30 years. Past president of the American Association of Petroleum Geologists, he has served for many years with the Geological Survey and Bureau of Mines, as well as with major and independent oil companies in highly technical and executive positions.

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Polishing Windshields Brings In Customers

Dealer William G. Baker's plan for getting new customers into his station at Roxbury, Mass., won him first prize in the Shell Oil Co.'s contest for April for selling ideas.

He polished the windshield of 25 cars parked within a reasonable distance of his station and left a card under the wiper blade saying the service was through courtesy of his station. He secured four customers as a result. Now he sets aside a regular time every day when he or his station men clean the windshields of all cars parked within a certain district. On Sundays he does the same for cars parked near a church in his neigborhood. Since he started, about three months ago, he has had a steady increase in gallonage.

His prize from the Shell company was a radio. Each month the company offers a similar prize for new selling ideas.

Large Part of Income Spent For Traveling

N. P. N. News Bureau

WASHINGTON—High ratio of automobile ownership in the West North Central and Mountain region states accounts for "the comparatively large share of family income spent on transportation in this area," U. S. Bureau of Labor Statistics reports. Approximately 10 cents out of every dollar spent goes for transportation. What is saved on food and housing expenses in these areas is largely offset by the outgo for transportation, according to the Bureau. Automobiles are owned by more than 3/5 of families in these areas.

By contrast, Bureau pointed out that in southern cities only slightly more than 2/5 of families have automobiles and in the large metropolitan areas the ratio was even smaller. "In New York City, for example, only 14.8 per cent of the families possessed automobiles."

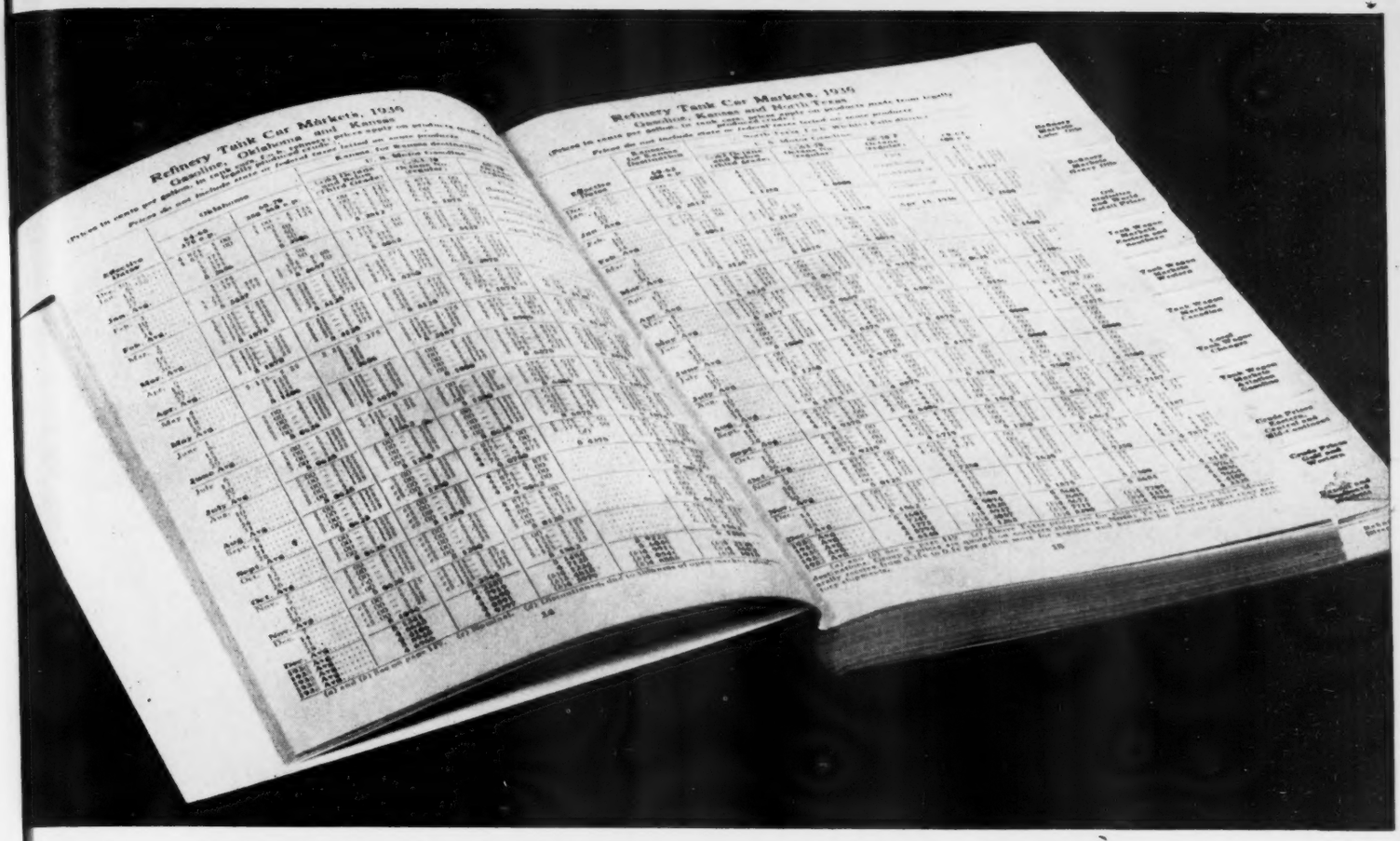
Recoil Oil For Cannon

N. P. N. News Bureau

WASHINGTON, May 13.—A recoil oil for aircraft cannon, permitting operation of such guns at temperatures as low as —40 degrees F., has been recently developed by Standard Oil Corp. of N. J., army spokesmen told House Appropriations Committee in relating contributions which industry has made to ordnance department research and development projects.

Oil Employment Rises

WASHINGTON—U. S. Labor Department reports that preliminary figures show employment index for petroleum refining in March stood at 121.4 as against 120.9 the previous month and 117.4 in March, 1939, while payroll indices stood at 135.5, 134.4 and 131.6, respectively, in these periods.


Refinery Tank Car Markets, 1939
Gasoline, Oklahoma and Kansas
Refinery Tank Car Markets, 1939
Gasoline, Kansas and North Texas

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In addition, the handbook includes a directory of refineries in the United States. This directory lists company individuals in charge of refinery sales and refinery operations and their addresses.

All information is compiled by the market reporting organization of National Petroleum News. Price $10 per copy.

CONTENTS

REFINERY

14,500 refinery tank car market prices for refined products, complete, as published weekly in National Petroleum News.

EXPORT—SEABOARD

23,000 export and seaboard terminal quotations for products on the Gulf and Pacific Coasts, and along the Atlantic Seaboard.

TANK WAGON, SERVICE STATION AND DEALER

18,000 tank wagon, service station, and dealer prices of motor gasolines and tank wagon prices of kerosine in the United States and Canada.

AVIATION

Aviation tank wagon gasoline prices at representative points in the United States.

WORLD

World retail gasoline and kerosine prices in 55 countries.

CRUDE

Crude oil prices for all fields as posted by major companies.

STATISTICS

Statistics on production and stocks of crude oil and principal refined products, by districts, for 1939 and yearly totals back to 1918.

REFINERY DIRECTORY

Refinery directory of plants in the United States. This directory gives plant location, type of plant, capacity, type of cracking process used, nature of output, railroad facilities, names of company individuals in charge of refinery sales and refinery operations and their addresses.

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Markets

Pennsylvania

CLEVELAND, May 11.—Kerosine prices were up 0.125c in western Pennsylvania the past week under the stimulus of continued heavy demand. Prices for other refined products for the most part were reported unchanged. Movement of lubes against domestic contracts was said to be picking up; export buying was at a standstill, according to reports.

Quotations reported by refiners late the past week for 45 w.w. kerosine were at 5c in the lower field and ranged from 5.125c to 5.25c in the upper field, up 0.125c in both districts. "Consumption of furnace oil was so heavy the past winter, that we had no opportunity to accumulate any kerosine for the spring farm demand," one refiner said. "Four other refiners have tried to buy from us this week," he added.

Fair to good movement of gasoline was reported by some refiners. "But, it's far from what we'd like to see it at this time of the year," one refiner said.

Mid-Continent

TULSA, May 11.—More refiners in the Mid-Continent reported reduced lube quotations the past week, resulting in reductions in the lows of price ranges for some grades. "Demand for all lubes could be much better than it is," some refiners said. Some expressed the belief that the spreading of war in Europe might stimulate exports.

Increased use of natural gasoline by Gulf Coast refiners was indicated when several manufacturers reported 10 and 20-car sales of Grade 26-70 at 1.25c FOB Breckenridge. This grade continued to move at 1.50c, FOB Group 3, and 2c FOB Oklahoma plants for local delivery, according to reports.

Several refiners said kerosine demand was "tops" and that they had also experienced renewal of interest in light fuels for heating. Unseasonable weather has prolonged demand for light fuels after many refiners had already discontinued making them, it was said.

Gasoline quotations reported by Mid-Continent refiners generally were unchanged, with demand described as "only fairly good."

Mid-Western

CHICAGO, May 11.—Demand for gasoline showed some improvement the past week, according to reports of refiners and tank car marketers in Chicago. Sellers also reported the call for kerosine continued heavy. Quotations for the most part were reported unchanged.

Refiners' Group 3 kerosine quotations ranged from 4 to 4.25c for 41-43, and 4.125 to 4.625c for 42-44. One marketer's quotations were 0.25c below refiners' lows, while other marketers quoted the same as refiners' lows. Marketers' quotations were: 1 at 3.75c, 2 at 3.875c, and 1 at 4c for 41-43; 1 at 3.875c, and 2 at 4.125c for 42-44.

Gasoline quotations reported by refiners ranged from 4.75 to 5.25c for 72-74 oct., 4.375 to 4.75c for 63-66, and 4 to 4.25c for 60 oct. and below. Some marketers' quotations were 0.5 to 0.625c below refiners' lows and ranged from 4.25 to 4.375c for 72-74 oct., 3.875 to 4c for 63-66, and 3.375 to 3.75 for 60 oct. & below, FOB Group 3.

Several marketers reported good demand for Southern Illinois gasoline and that immediate shipments were hard to obtain. Two marketers said that quotations for U. S. Motor, 60 oct. & below, ranged from 4.125 to 4.375, FOB Southern Illinois plants.

Three marketers reported the following open spot sales during the week: 20 cars 72-74 oct. leaded, 13 at 4.25c and 7 at 4.375c; 5 cars 63-66 oct. at 3.875c; 3 cars 60 oct. and below, 2 at 3.375c and 1 at 3.625c; 1 car range oil at 3.625; all sales FOB Group 3.

A marketer also reported selling a car of local kerosine at 5.50c, delivered Chicago. Refiners' range oil quotations ranged from 3.75 to 3.875c while marketers' quotations ranged from 3.625 to 3.875c.

California

LOS ANGELES, May 11.—West Coast export gasoline prices were down 0.875c a gal. with offshore shipments reaching new lows for the year, according to reports the past week.

Estimates placed the total of tanker movements for the 7-day period ended May 10, at 78,000 bbls. daily for all products, or 44,600 bbls. daily under shipments of the previous 7-day period. The decline in exports was chiefly in fuel oil, which decreased 9200 bbls. daily to an average of 37,400 bbls. In some quarters it was said that Russians have made no purchases in California since February.

Gasoline of 70 octane, 375 e. p. blend, was offered at 5.50c by one refiner, with the same refiner reporting similar reductions in his export quotations for lower octane grades.

In the domestic market, advances were reported in third-grade gasoline, gas oil and kerosine distillate at independent plants in the Los Angeles Basin.

Atlantic Coast

NEW YORK, May 11.—Quotations for refined products along the Atlantic Coast generally were reported unchanged by suppliers the past week. Several suppliers who had been out of the open spot market on kerosine and light fuels said that, due to warmer weather, they were able to offer again. Gasoline prices were off slightly at one or two points.

Reports from New York barge terminal operators were that 72-74 oct. gasolines was being offered at 6c in tank cars and 5.75c in barges. No open spot sales were reported at these prices. One New York tanker terminal operator said he was offering a small quantity of 65-66 oct. gasoline made from Mexican crude at 5.50c in barge lots but added he was only doing this to clean out a tank. Refiners' and tanker terminal operators' quotations for all grades of gasoline at New York ranged upward from 6c in barges and 6.25c in tank cars, according to reports.

Gulf

NEW YORK, May 11.—Considerably more activity in cargo trading at the Gulf was reported during the week ended May 10 than for some time past. Sales of gas and bunker oils led, with gasoline and kerosine lagging. No new export inquiries were in the market, but some refiners expressed the belief that war developments in Europe might bring a revival of export buying in the near future.

Two cargoes of 43 d.i. and a cargo of 48 d.i. gas oil were sold at 3.50c for immediate lifting, it was reported, and a refiner said he had sold 20,000 bbls. of 50 d.i. at 3.75c for May 10 loading. Cargo of No. 2 fuel was reported sold at 3.50c, with another cargo being offered at the same price. Asking prices reported for No. 2 ranged up to 3.75c.

A refiner from the southwest reported selling a cargo of Bunker "C" fuel "at 15c above market price on date of loading." Further details were not disclosed. Another cargo of Bunker 'C" was offered by a refiner at 90c, with quotations reported here ranging upward from 75c.

Sale of 500 tons of grade "C", ships' bunkers, at 90c was reported, and another refiner said he had sold 3500 bbls. of the same material at 95c. Quotations reported for Bunker "C", ships' bunkers ranged from 90 to 95c.

N.P.N. Gasoline Index

	Dealer T.w. Cents per	Tank Car Gal.
May 13	9.10	5.66
Month ago	9.52	5.88
Year ago	9.49	5.67

Dealer index is an average of "undivided" dealer prices, ex-tax, in 50 cities.

Tank car index is a weighted average of 9 wholesale markets for regular-grade gasoline.

REFINERY and SEABOARD PRICES

In bulk lots by Motor Transport, Tank Car, Barge or Tanker as shown

(NOTE—Parenthetical figures after prices indicate number of companies quoting when less than three companies are quoting.)

HOW PRICES ARE REPORTED—

Refinery and Seaboard prices in National Petroleum News are gathered by PLATT'S OILGRAM and are as published in the Monday issue of the OILGRAM.

PLATT'S OILGRAM is a reporting service issued in three identical editions daily from News Bureaus at New York, Cleveland, and Tulsa, Okla. PLATT'S OILGRAM gathers and publishes what its publisher and representatives believe to be accurate news of sales, prices and current happenings affecting the oil industry and that will be of interest to its subscribers. As this information is usually private, OILGRAM reports it according to what is is able to obtain from sources deemed reliable.

All information is supplied without guarantee as to its completeness, accuracy, time of transmission or promptness of delivery.

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Publisher reserves the right to change the extent, nature and form of showing this information at any time.

Prices shown in the tables are quotations (meaning sellers' general offers or posted prices), or actual sales prices, reported to OILGRAM by refiners for "open spot" transactions, except as otherwise specified.

Prices arrived at by discounts off a specified price or "market date of shipment," prices named in contracts or prices arrived at in accordance with any arrangement made prior to date of sale, are not for "open spot" transactions and therefore are not considered in making the price tables. Prices made to brokers and prices in "inter-refinery" transactions are also not considered except as may be noted.

All prices are for "immediate" shipment except in Gulf Coast bulk transactions where shipment is generally to be made in ninety days. Prices are FOB refineries, pipelines, or tanker terminals in districts designated.

Prices shown are for quantities in bulk such as tank car lots, motor transport lots or barge lots; and in cents per gallon; heavy fuel oils are in dollars per barrel of 42 U.S. gallons; wax and petrolatums are in cents per pound. Prices applying to barges or cargoes only are so designated.

Prices do not include taxes or inspection fees. Prices are published at the close of the business day.

Mid-Western prices in the tables were gathered from refiners with offices located in Chicago and the surrounding territory. While the prices are quoted on a Group 3 (Oklahoma) freight basis, this is in accordance with the custom of the oil industry which uses Group 3 as a price basis for the ease of comparing prices even when the material originates in another refining district. Other refinery prices are given by and for the particular refining district where the material is made and from which it is shipped.

When prices obtained by OILGRAM do not conform to these conditions the exception and the new conditions are noted in the news lead or in conjunction with the price table by footnote or otherwise, for the particular refinery or sales district involved.

Crude oil and products covered by OILGRAM'S news and price service, except where noted, have been represented to the publisher as fully up to the customary trade specifications indicated and according to the generally accepted methods of test; and all crude oil and all products thereof as having been lawfully produced and transported.

Any apparent error should be reported to the nearest OILGRAM or National Petroleum News office at once as no correction will be made after the second issue of the OILGRAM or National Petroleum News following its publication.

Summary of Daily Gasoline Prices (May 7 to May 13)

	Latest Prices Mon. May 13	May 7	May 8	May 9	May 10
U. S. Motor, (ASTM octane)					
72-74 octane:					
Oklahoma	4 75 – 5 25	4 75 – 5 25	4 75 – 5 25	4 75 – 5 25	4 75 – 5 25
Mid-Western (Group 3 basis)	4 75 – 5 25	4 75 – 5 25	4 75 – 5 25	4 75 – 5 25	4 75 – 5 25
N. Tex. (For shpt. to Tex. & N. M. dest'ns.)	4 75 – 4 875	4 75 – 4 875	4 75 – 4 875	4 75 – 4 875	4 75 – 4 875
W. Tex. (For shpt. to Tex. & N. M. dest'ns.)	5 00 (2)	5 00 (2)	5 00 (2)	5 00 (2)	5 00 (2)
East Texas	5 00 (1)	5 00 (1)	5 00 (1)	5 00 (1)	5 00 (1)
63-66 octane:					
Oklahoma	4 25 – 4 75	4 25 – 4 75	4 25 – 4 75	4 25 – 4 75	4 25 – 4 75
Mid-Western (Group 3 basis)	4 375– 4 75	4 375– 4 75	4 375– 4 75	4 375– 4 75	4 375– 4 75
N. Tex. (For shpt. to Tex. & N. M. dest'ns.)	4 50 – 4 625	4 50 – 4 625	4 50 – 4 625	4 50 – 4 625	4 50 – 4 625
W. Tex. (For shpt. to Tex. & N. M. dest'ns.)	4 625 (2)	4 625 (2)	4 625 (2)	4 625 (2)	4 625 (2)
60 octane & below:					
Oklahoma	4 00 – 4 25	4 00 – 4 25	4 00 – 4 25	4 00 – 4 25	4 00 – 4 25
Mid-Western (Group 3 basis)	4 00 – 4 25	4 00 – 4 25	4 00 – 4 25	4 00 – 4 25	4 00 – 4 25
N. Tex. (For shpt. to Tex. & N. M. dest'ns.)	4 00	4 00	4 00	4 00	4 00
W. Tex. (For shpt. to Tex. & N. M. dest'ns.)	4 00 (2)	4 00 (2)	4 00 (2)	4 00 (2)	4 00 (2)
Motor Gasoline, 72-74 octane (ASTM):					
New York harbor	6 25 – 7 00	6 25 – 7 00	6 25 – 7 00	6 25 – 7 00	6 25 – 7 00
Philadelphia district	6 25 – 7 25	6 25 – 7 25	6 25 – 7 25	6 25 – 7 25	6 25 – 7 25
Baltimore district	6 25 – 7 75	6 25 – 7 75	6 25 – 7 75	6 25 – 7 75	6 25 – 7 75
Motor Gasoline:					
74-76 Octane: (L-3)					
Bradford-Warren (Western Penna.)	6 00	6 00	6 00	6 00	6 00
Other Districts (Western Penna.)	5 75 – 6 00	5 75 – 6 00	5 75 – 6 00	5 75 – 6 00	5 75 – 6 00
72-73 Octane: (L-3)					
Bradford-Warren (Western Penna.)	5 75 (2)	5 75 (2)	5 75 (2)	5 75 (2)	5 75 (2)
Other Districts (Western Penna.)	5 50 – 5 75	5 50 – 5 75	5 50 – 5 75	5 50 – 5 75	5 50 – 5 75

REFINERY PRICES

Gasoline—U. S. Motor (ASTM Octane) except where otherwise specified

Prices Effective	May 13	May 6
OKLAHOMA		
72-74 oct	4 75 – 5 25	4 75 – 5 25
63-66 oct	4 25 – 4 75	4 25 – 4 75
60 oct. & below	4 00 – 4 25	4 00 – 4 25
60-62 400 e.p.	4 00 (2)	4 00 (2)
MID-WESTERN		
72-74 oct	4 75 – 5 25	4 75 – 5 25
63-66 oct	4 375– 4 75	4 375– 4 75
60 oct. & below	4 00 – 4 25	4 00 – 4 25
N. TEX. (For shpt. to Tex. & N. M. dest'ns.)		
72-74 oct	4 75 – 4 875	4 75 – 4 875
63-66 oct	4 50 – 4 625	4 50 – 4 625
60 oct. & below	4 00	4 00
60-62, 400 e.p.	4 00 (2)	4 00 (2)
W. TEX. (For shpt. to Tex. & N. M. dest'ns.)		
72-74 oct	5 00 (2)	5 00 (2)
63-66 oct	4 625 (2)	4 625 (2)
60 oct. & below	4 00 (2)	4 00 (2)
CENT. W. TEX. (Prices to truck transports)		
72-74 oct. (L-3)	5 00 (1)	5 00 (1)
67-69 oct. (L-3)	4 625 (1)	4 625 (1)
62 oct. & below (L-3)	4 00 (1)	4 00 (1)
E. TEX.		
72-74 oct	5 00 (1)	5 00 (1)
60-62, 400 e.p.	4 25 (1)	4 25 (1)
KANSAS (For Kansas destinations only)		
72-74 oct	5 00 – 5 125	5 00 – 5 125
63-66 oct	4 625– 4 875	4 625– 4 875
60 oct. & below	4 125– 4 375	4 125– 4 375
N. LA. (For shipment to La. & Ark.)		
72-74 oct	5 125–5 375 (1)	5 125–5 375 (1)
63-66 oct	4 625–4 875 (1)	4 625–4 875 (1)
60 oct. & below	4 25 – 4 50 (1)	4 25 – 4 50 (1)

Prices Effective	May 13	May 6
ARK. (FOB Ark. plant of one refiner, for shipment to Ark. & La.)		
72-74 oct	4 875	
70-72 oct	4 625	4 75
60 oct. & below	4 00	4 00
WESTERN PENNA. (Motor gasoline.)		
Bradford-Warren:		
74-76 oct. (L-3)	6 00	6 00
72-73 oct. (L-3)	5 75 (2)	5 75 (2)
U.S. Motor (58-62[h])		4 50 (1)
Other districts:		
74-76 oct. (L-3)	5 75 – 6 00	5 75 – 6 00
72-73 oct. (L-3)	5 50 – 5 75	5 50 – 5 75
U.S. Motor (58-62[h])		
CENTRAL MICHIGAN (f)		
U.S. Motor: (Oct. L-3)		
72-74 oct	6 50 – 7 25	6 50 – 7 00
67-69 oct	5 50 – 6 25	5 50 – 6 25
Str.-Run Gasoline	(g) 4 25 – 4 75	(g) 4 25 – 4 75
OHIO (S. O. Ohio quotations for statewide delivery and subject to exceptions for local price disturbances)		
72-74 oct	7 25	7 25
CALIFORNIA U.S. Motor:		
58-61 grav., 375-400 e.p., 65 oct. & above	7 25 – 9 75	7 25 – 9 75
54-58 grav., for outside state shipment	6 25 – 9 00	6 25 – 9 00
54-58 grav., for instate shipment	6 15 – 9 25	6 00 – 9 25

Kerosine, Gas & Fuel Oils

Prices Effective	May 13	May 6
OKLAHOMA		
41-43 grav. w.w.	4 00 – 4 25	4 00 – 4 25
42-44 grav., w.w.	4 125– 4 625	4 125– 4 625
Range Oil	3 625– 3 875	3 625– 3 875
No. 1 P.W.	3 625– 3 75	3 625– 3 75
No. 1 straw	3 375–3 75(2)	3 375–3 75 (2)
No. 2 straw	3 25 – 3 625	3 25 – 3 625
No. 2 dark	3 375 (1)	3 375 (1)
U.G.L. gas oil	3 25 (2)	3 25 (2)
No. 3 fuel	3 25 – 3 375	3 25 – 3 375
No. 6 fuel	$0 50–$0 55 (2)	$0 50 –$0 55(2)
14-16 fuel	$0 85 (1)	$0 85 (1)
MID-WESTERN		
41-43 grav. w.w.	4 00 – 4 25	4 00 – 4 25
42-44 grav. w.w.	4 125– 4 625	4 125– 4 625
Range oil	3 75 –3 875 (2)	3 75 –3 875 (2)
No. 1 p.w.	3 625– 3 75	3 625– 3 75
No. 1 straw	3 50 – 3 625	3 50 – 3 625
No. 2 straw	3 375– 3 50	3 375– 3 50
No. 3	3 125– 3 375	3 125– 3 375
No. 5	$0 75 (1)	$0 75 (1)
No. 6	$0 45–$0 55 (2)	$0 45–$0 55 (2)
N. TEX. (For shpt. to Tex. & N. M. dest'ns.)		
41-43 grav. w.w.	4 00 (2)	4 00 (2)
No. 1 P.W.	3 875 (2)	3 875 (2)
E. TEX.		
41-43 grav. w.w.	3 50 –3 75 (1)	3 50 –3 75 (1)
KANSAS (For Kansas destinations only)		
41-43 gravity w.w.	4 1875–4 25 (2)	4 1875–4 25 (2)
42-44 gravity w.w.	4 375–4 50 (2)	4 375 (1)
No. 1 p.w.	3 875 (2)	3 875(2)
No. 6 fuel	$0 60 (2)	$0 60 (2)
N. LA. (For shipment to La. and Ark.)		
41-43 grav. w.w.	3 875–4 00 (1)	3 875–4 00 (1)
10-14 gravity	$0 65–$0 70 (1)	$0 65–$0 70 (1)

(f) Prices FOB Central Michigan refinery group basis for shipment within Michigan; shipments may originate at plants outside Central group. (g) Excluding Detroit shipment. (h) For shipment to Ark. points only. (i) Quotations. (j) Sale. (k) Sales.

REFINERY PRICES (Continued)

(NOTE—Parenthetical figures after prices indicate number of companies quoting when less than three companies are quoting.)

Kerosine, Gas & Fuel Oil

(Continued)

Prices Effective	May 13	May 6
ARK. (F.o.b. Ark. plant of one refiner for shipment to Ark. and La.)		
41-43 grav. w.w.	4.375	4.25
No. 1	3.875	3.875
No. 2	3.50	3.50
28-32 zero fuel	3.25	3.25
Tractor Fuel	(h)4.25	(h)4.25
WESTERN PENNA.		
Bradford-Warren:		
45 grav. w.w.	5.125– 5.25	5.00 – 5.25
46 grav. w.w.	5.375 (1)	5.375 (1)
36-40 gravity	4.875 (1)	4.75 (1)
Other districts:		
45 grav. w.w.	5.00	4.875– 5.00
46 grav. w.w.	5.125	5.125
47 grav. w.w.	5.125– 5.25	5.125– 5.25
36-40 gravity	(l) 3.875–4.50	(l) 3.875–4.50
CENTRAL MICHIGAN (f)		
47-49 gravity w.w.	4.50 – 5.00	4.50 – 5.00
P.W. Distillate	4.25 – 4.75	4.25 – 4.75
No. 3 gas oil, Str	4.00 – 4.25	4.00 – 4.25
U.G.I. gas oil	3.00 – 3.75	3.00 – 3.75
Fuel Oils (Vis. at 100):		
500-700 Vis.	2.25 –3.00 (2)	2.25 –3.00 (2)
300-500 Vis.	2.25 – 3.25	2.25 – 3.25
100-300 Vis.	3.25 –3.50 (1)	3.25 –3.50 (1)
CALIFORNIA		
40-43 grav. w.w.	4.50 – 6.00	4.50 – 6.00
San Joaquin Valley:		
Heavy fuel	$0.55 –$0.75	$0.55 –$0.75
Light fuel	$0.75 –$0.85	$0.75 –$0.85
Diesel fuel	2.75 – 4.00	2.75 – 4.00
Stove dist.	3.00 – 5.00	3.00 – 5.00
Los Angeles:		
Heavy fuel	$0.45 –$0.70	$0.45 –$0.70
Light fuel	$0.55 –$0.80	$0.55 –$0.80
Diesel fuel	2.25 – 4.00	2.25 – 4.00
Stove dist.	2.25 – 5.00	2.25 – 5.00
San Francisco:		
Heavy fuel	$0.80	$0.80
Light fuel	$0.90	$0.90
Diesel fuel	4.50	4.50
Stove dist.	5.50	5.50

Note: All above heavy fuels meet Pacific specification 400; light fuel, spec. 300; Diesel fuels, spec. 200; and stove distillate, spec. 100.

Lubricating Oils

WESTERN PENNA.

Viscous Neutrals — No. 3 col. Vis. at 70° F.

200 Vis. (180 at 100°) 420-425 fl.

0 p.t.	25.50 (1)	25.50 (1)
10 p.t.	24.50 (1)	24.50 (1)
15 p.t.	23.50 (1)	23.50 (1)
25 p.t.	22.00	22.00 –23.00

150 Vis. (143 at 100) 400-405 fl.

0 p.t.	23.50 (1)	23.50 (1)
10 p.t.	22.50 (1)	22.50 (1)
15 p.t.	21.50 (1)	21.50 (1)
25 p.t.	20.00	20.00 –21.00
Cylinder Stocks		
Brt. stk., 145-155 vis. at 210°, 540-550 fl., No. 8 col.		
10 p.t.	22.50 (1)	22.50 (1)
15 p.t.	21.50 (1)	21.50 (1)
25 p.t.	20.00	20.00 –22.00
600 S.R. filterable	12.00 –13.00	12.00 –13.00
650 S.R.	14.00 –15.00	14.00 –15.00
600 fl.	15.00 –16.00	15.00 –16.00
630 fl.	17.00 –18.00	17.00 –18.00

MID-CONTINENT (F.o.b. Tulsa)

Neutral Oils (Vis. at 100° F. 0 to 10 P.P.)

Pale Oils:

Vis.	Color		
60-85—	No. 2	6.00 – 6.50	6.00 – 6.50
86-110—	No. 2	6.25 – 6.75	6.25 – 6.75
150—	No. 3	10.50 –11.75	10.50 –12.75
180—	No. 3	11.50 –12.00	11.50 –13.00
200—	No. 3	12.00 –13.50	12.00 –13.50
250—	No. 3	13.00 –13.50	13.00 –14.50
280—	No. 3	14.00 –15.25	14.00 –16.25
300—	No. 3	14.50 –15.75	14.50 –16.75

Lubricating Oils (Cont'd)

Prices Effective	May 13	May 6
Red Oils:		
180—No. 5	11.50 (1)	11.50 (1)
200—No. 5	11.50 –13.00	11.50 –13.00
280—No. 5	14.75 (1)	14.75 (1)
300—No. 5	13.50–14.00 (2)	13.50–14.00 (2)

Note: Viscous Neutrals, 15-25 p.p. generally are quoted 0.5c under 0-10 p.p. oils. Non-viscous oils, 15-25 p.p., generally are quoted 0.25c under 0-10 p.p. oils.

Bright Stocks:

200 Vis. at D. 210°	23.00 (1)	23.00 (1)
150-160 Vis. at 210° D:		
0 to 10 p.p.	19.00 –21.00	19.00 –23.00
10 to 25 p.p.	18.50 –20.50	18.50 –22.50
25 to 40 p.p.	18.50–20.00 (2)	18.50–22.00 (2)
150-160 vis. at 210° E.	18.00 –20.00	19.00 –22.00
120 Vis. at 210° D:		
0 to 10 p.p.	18.00 –20.00	20.00 –22.00
25 to 40 p.p.	18.75 (1)	20.625 (1)
600 S.R. Dark Green	7.00 (1)	7.50 (1)
600 S.R. Olive Green	8.00 – 9.50	8.50 – 9.50
631 S.R.	16.00 (1)	16.00 (1)
Black Oil	4.00 –5.50 (2)	4.00 –5.50 (2)

SOUTH TEXAS Neutral Oils

Vis.	Color		
Pale Oils:	(*Vis. at 100°F*)		
100 No.	1½-2½	5.75 – 6.00	5.75 – 6.00
200 No.	2-3	7.50	7.50
300 No.	2-3	8.00	8.00
500 No.	2½-3½	9.00	9.00
750 No.	3-4	9.50	9.50
1200 No.	3-4	9.875	9.875
2000 No.	4	10.00	10.00
Red Oils:			
200 No.	5-6	7.50	7.50
300 No.	5-6	8.00	8.00
500 No.	5-6	9.00	9.00
750 No.	5-6	9.50	9.50
1200 No.	5-6	9.875	9.875
2000 No.	5-6	10.00	10.00

CHICAGO

Neutral Oils (Vis. at 100° F. 0 to 10 p.p.)

Pale Oils

Vis.	Color		
60-85—	No. 2	7.75	7.75
86-110—	No. 2	8.00	8.00
150—	No. 3	11.25	11.25
180—	No. 3	12.50	12.50
200—	No. 3	13.00	13.00
250—	No. 3	14.00	14.00
Red Oils:			
180—	No. 5	12.00	12.00
200—	No. 5	12.50	12.50
250—	No. 5	13.00	13.00
280—	No. 5	13.50	13.50
300—	No. 5	14.00	14.00

Note: Viscous oils, 15 to 30 p.p. are quoted 0.5c lower; 60-85 and 86-110 No. 2 non-viscous oils, 15 to 30 p.p., 0.25c lower.

Unfiltered Steam Refined: (Viscosity at 210°)

140	9.50	9.50
160	10.50	10.50
200	11.50	11.50

Bright stocks, 160 vis. at 210, No. 8 color:

0 to 10 p.p.	19.00	20.00
15 to 25 p.p.	18.00	19.00
30 to 40 p.p.	17.50	18.50
E filtered Cyl. Stock	14.00	14.00

Note: To obtain prices delivered in Chicago, add 0.25c per gal.

Natural Gasoline

(Group 3 & Breckenridge prices are to blenders on freight basis shown below. Shipments may originate in any Mid-Continent manufacturing district.)

FOB GROUP 3		
Grade 26-70	(k)1.50	(k)1.50
FOB BRECKENRIDGE		
Grade 26-70	(i)1.25	(k)1.25
CALIFORNIA (FOB plants in Los Angeles basin)		
75-85, 350-375 e.p. for blending	6.00 – 6.25	6.00 – 6.25

Naphtha and Solvent

Prices Effective	May 13	May 6
(FOB Group 3)		
Stoddard solvent	5.875	5.875
Cleaners' naphtha	6.375	6.375
V. M. & P. naphtha	6.375	6.375
Mineral spirits	5.375	5.375
Rubber solvent	6.375	6.375
Lacquer diluent	6.625– 7.375	6.625– 7.375
Benzol Diluent	7.875– 8.375	7.875– 8.375

Wax

White Crude Scale:

WESTERN PENNA. (Bbls., C.L., N. Y.)		
122-124 A.m.p.	4.75	4.75
124-126 A.m.p.	4.75 – 4.875	4.75
OKLAHOMA (Bbls. or burlap bags, C.L.)		
124-126 A.m.p.	4.75 –5.00 (2)	4.75 –5.00 (2)

CHICAGO (FOB Chicago district refinery of one refiner, in bags or slabs loose, carloads. Melting points are EMP (ASTM) methods; add 3° F. to convert into AMP.)

Fully refined:		
122-124 (bags only)	6.10	6.10
125-127	6.10	6.10
127-129	6.35	6.35
130-132	6.65	6.65
132-134	6.90	6.90
135-137	7.65	7.65

Petrolatums

WESTERN PENNA. (Bbls., carloads; tank cars, 0.5c per lb. less.)		
Snow White	6.125– 6.875	6.125– 6.875
Lily White	5.125– 5.875	5.125– 5.875
Cream White	4.125– 4.875	4.125– 4.875
Light Amber	3.00 – 3.625	3.00 – 3.625
Amber	2.875– 3.375	2.875– 3.375
Red	2.625– 3.125	2.625– 3.125

Group 3 Freight Rates

To Division Headquarters Points of Standard Oil Co. of Indiana

	Gasoline-Kerosine		Distillate-Gas Oil-Fuel Oil	
	Cents per Cwt.	Cents per gal. 6.6 lbs.	Cents per Cwt.	Cents per gal. 7.4 lbs.
Chicago, Ill.	40	2.640	32	2.368
Decatur, Ill.	39	2.574	31	2.294
Joliet, Ill.	40	2.640	32	2.368
Peoria, Ill.	39	2.574	31	2.294
Quincy, Ill.	36	2.376	29	2.146
Indianapolis, Ind.	48	3.168	39	2.886
Evansville, Ind.	46	3.036	37	2.738
South Bend, Ind.	49	3.231	**42	**3.108
Detroit, Mich.	64	4.224	51	3.774
Gd. Rapids, Mich.	61	4.026	50	3.700
Saginaw, Mich.	66	4.356	53	3.922
Green Bay, Wis.	51	3.366	41	3.034
Milwaukee, Wis.	43	2.838	34.5	2.553
LaCrosse, Wis.	46	3.036	37	2.738
Min'ap'ls-St. Paul	46	3.036	37	2.738
Duluth, Minn.	52	3.432	41.5	3.071
Mankato, Minn.	46	3.036	37	2.738
Des Moines, Ia.	36	2.376	29	2.146
Davenport, Ia.	39	2.574	31	2.294
Mason City, Ia.	42	2.772	33.5	2.479
St. Louis, Mo.	33	2.178	26.5	1.961
Kansas City, Mo.	28	1.848	22.5	1.665
St. Joseph, Mo.	28	1.848	22.5	1.665
Fargo, N. D.	63	4.158	50.5	3.737
Minot, N. D.	83	5.478	66.5	4.921
Huron, S. D.	53	3.498	42.5	3.145
Wichita				
From Ponca City	7.5	*0.495	7.5	†0.555
From Tulsa	12.5	*0.825	12.5	†0.925
From Cushing	11	*0.726	11	†0.814

*This rate also includes distillate rate at 6.6 lbs. per gal.

**This rate applies only to residual fuel and gas oil. Combination rate of 32c per cwt. at 7.4, Group 3 to Chicago, plus 9c per cwt. at 6.6, Chicago to South Bend, total of 2.962c per gal., applies to petroleum fuel oil distillate not suitable for illuminating purposes.

†This rate is exclusive of distillate which is based on 6.6 lbs. per gal. from Ponca City, Tulsa and Cushing, Okla., to Wichita. Includes only gas oil and fuel oil.

NOTE: There is no Group 3 rate to Wichita, Kans.

(f) Prices FOB Central Michigan refinery group basis for shipment within Michigan; shipments may originate at plants outside Central group. (g) Excluding Detroit shipment. (h) For shipment to Ark. points only. (i) Quotations. (j) Sale. (k) Sales. (l) Pittsburgh district prices excluded.

SEABOARD PRICES EXPORT AND COASTWISE

(NOTE—Parenthetical figures after prices indicate number of companies quoting when less than three companies are quoting.)

Atlantic Coast

(Prices are of refiners, FOB their refineries & their tanker terminals, & of tanker terminal operators, FOB their terminals)

Prices Effective May 13

MOTOR GASOLINE (ASTM Octane)

District:	72-74 Oct.	68-70 Oct.	65-66 Oct.	60-64 Oct.	KEROSINE and/or NO. 1 FUEL
N. Y. Harb.	6.25 – 7.00	6.25	6.25	6.25 – 6.50	5.90 – 6.00
N. Y. Harb., barges	6.00 – 7.00	6.00 – 6.25	6.00 – 6.25	6.00 – 6.50	5.80 – 5.90
Albany	6.50 – 7.10	.....	.....	.....	6.00 (2)
Philadelphia	6.25 – 7.25	6.25 – 6.75	6.25 –6.50 (2)	6.25 – 6.75	6.00 – 6.25
Baltimore	6.25 – 7.75	6.25 – 7.00	6.25 (2)	6.25 – 6.50	6.00
Norfolk	7.00 – 7.75	6.50 – 7.00	6.75 (1)	6.50 –6.75 (2)	5.50 – 5.75
Wilm'ton	7.00 – 7.85	6.50 – 7.00	6.75 (1)	6.25 – 6.75	5.50 – 6.00
Char'ston	7.00 – 7.55	7.00 (2)	6.75 (1)	6.50 – 6.75	5.50 –5.75 (2)
Savannah	7.00 – 7.25	6.50 – 7.00	.....	6.25 – 6.75	5.50 – 5.875
Jacksonville	7.00 – 7.25	6.50 – 7.00	.....	6.25 – 6.75	5.50 – 5.875
Miami	7.00–7.25 (2)	7.00 (1)	.....	6.25 –6.75 (2)	5.75 –5.875 (1)
Tampa	6.75 – 7.25	6.375–7.00 (2)	.....	6.25 – 6.75	5.50 – 5.875
Pensacola	7.00–7.25 (1)	.....	.....	6.50 –6.75 (1)	5.50 –5.625(1)
Mobile	6.50 – 7.00	6.25 (1)	.....	5.75 – 6.50	5.50 –5.625(1)
Portland	6.60 – 7.10	6.50 (1)	.....	.....	6.20 (2)
Boston	6.25 – 7.00	6.75 (1)	6.75 – 7.00	6.00 – 6.25	6.00 – 6.10
Providence	6.25 –7.00	.....	[6.75 –7.00 (2)	6.25 – 6.50	6.00 – 6.10

FUEL OILS

	Nos. 2-3	No. 4	No. 5	No. 6
N. Y. Harb.	5.40 – 5.50	5.40 – 5.50	$1.70 –$1.85	$1.50
N. Y. Harb., barges	5.20 – 5.40	5.30 – 5.40	.....	.....
Albany	5.40 –5.50 (2)	5.50 (2)	$2.00 (1)	$1.70 (1)
Philadelphia	5.00 – 5.50	4.75 – 5.25	$1.46 –$1.70	$1.25 –$1.50
Baltimore	5.00 – 5.50	4.75 – 5.50	$1.47 (1)	$1.25 –$1.50
Norfolk	5.50 (1)	.....	.....	$1.50 (1)
Wilmington	5.00 – 5.50	5.25 (1)	.....	.....
Charleston	5.50 (1)	.....	.....	$1.45 (1)
Savannah	.....	.....	.....	$1.45 (1)
Jacksonville	5.00 (1)	5.00 (1)	.....	$1.45 (2)
Tampa	5.00 (1)	.....	.....	$1.40 (2)
Portland	5.50 –5.70 (2)	.....	$2.10 (1)	$1.60 (2)
Boston	5.40 – 5.60	.....	$1.80 (2)	$1.50 (2)
Providence	5.40 – 5.50	5.50 (1)	$1.75–$1.80 (2)	$1.50 (2)

	Bunker C Fuel Ships' bunkers	Diesel Oil Ships' bunkers	Diesel Oil Shore Plants	Gas House 28-34	Gas Oil Gravity
N. Y. harbor	$1.50	$2.20	5.40	5.50	.....
Albany	$1.70 (1)	.....	5.50	.....	.....
Philadelphia	$1.25 –$1.50	$2.10 –$2.30	.....	.....	.....
Baltimore	$1.50 (2)	$2.20	.....	.....	.....
Norfolk	$1.50 (1)	$2.10 –$2.20	.....	.....	.....
Charleston	$1.45 (1)	$1.90 –$2.20	.....	.....	.....
Savannah	$1.45 (1)	$1.995	.....	.....	.....
Jacksonville	$1.45 (2)	$1.995–$2.10	5.00	.....	.....
Tampa	$1.40 (2)	$1.995–$2.10	5.00	.....	.....
Portland	$1.60 (2)	$2.30	5.70	5.80	.....
Boston	$1.50 (2)	$2.20	5.50	5.60	.....
Providence	$1.50 (2)	$2.20	5.50	5.60	.....

New York Export Lubes

(Penna. Products in bbls. FAS New York)

Prices Effective	May 13	May 6
Bright stock:		
Light, 25 p.t.	29.00 (2)	29.00 (2)
Neutral oil:		
200 3 color, 25 p.t.	31.00 (1)	31.00 (1)
150 3 color, 25 p.t.	29.00 (2)	29.00 (2)
600 s.r., unfilt.	19.00–20.50 (2)	19.00–20.50 (2)
650 s.r., unfilt.	20.00–22.50 (2)	20.00–22.50 (2)
600 fl. s.r.	21.00–23.50 (2)	21.00–23.50 (2)
630 fl., s.r.	26.00–26.50 (2)	26.00–26.50 (2)

Wax

(A.S.T.M. Tests. Melting points, however, are A.M.P., 3° higher than E.M.P. Export prices, FAS, c.l. Domestic prices, FOB refr'ies., in bags, c.l., with 0.2c discount allowed for shipment in bulk, except where noted. Scale solid; fully refined slabs in bags)

Prices Effective May 13

	New Orleans Export	N. Y. Domestic	N. Y. Export
Crude Scale:			
124-6 Yellow	4.75 (1)	.....	4.75 (1)
122-4 White	.....	4.75	4.75
124-6 White	4.75–5.00 (2)	4.75–4.875	4.75–4.875
Fully Refined:			
123-5	.....	6.25 (1)	6.625 (1)
125-7	6.75 (1)	6.30 (1)	6.75 (2)
128-30	7.00 (1)	6.10-6.40(2&i)	7.00 (2)
130-2	7.25 (1)	6.60 (1&i)	7.25 (2)
133-5	7.75 (1)	6.65-6.85(2&i)	7.75 (2)
135-7	8.25 (1)	.....	8.25 (2)
108-11 White Match	.....	.....	5.15 (1&j)

Naphtha

Prices Effective May 13	V.M.&P. Naphtha	Mineral Spirits
Baltimore	9.50	8.0–8.5
New York Harbor	9.0–9.5	8.5–9.0
Philadelphia district	10	8.25–9
Boston	9.5	9.25 –9.50
Providence	9.5	9.5
†Ohio points, delivered	8.75	*8.25

*This is on rubber solvent.

†Ohio prices are those of S. O. Ohio. Its prices for D.C. naphtha, special Varnolene, Varnolene and Sohio Solvent are same as for V.M.&P.

Pacific Export

(Quotations at seaboard, Los Angeles, cargo lots, except where otherwise noted.)

Prices Effective	May 13	May 6
375 e.p. blend, 70 oct.	5.50 – 6.00	6.375 – 6.75
390 e.p. blend, 68 oct.	5.375 – 5.875	6.25 – 6.75
390 e.p. blend, 66 oct.	5.25 – 5.75	6.125 – 6.375
400 e.p. blend, 65 oct. min.	5.125– 5.625	6.00 – 6.25
U. S. Motor, under 65 octane	4.875– 5.375	5.75 – 6.00
38-40 grav. w.w. kero., 150 fire point	4.25 – 5.00	4.25 – 5.00
41-43 grav., w.w. kero.	4.50 – 5.00	4.50 – 5.00
44 grav., w.w. kero.	5.00 – 5.50	5.00 – 5.50
Diesel fuel, 24 & above	$1.25 –$1.35	$1.25 –$1.35
Diesel fuel, under 24	$1.15 –$1.25	$1.15 –$1.25
30-34 grav. diesel (gas oil) Pac. Spec. 200	$1.25 –$1.35	$1.25 –$1.35
Grade C fuel, Pac. Spec. 100	$0.68 –$0.73	$0.68 –$0.73
In Ships' Bunkers, or deep tank lots:		
Diesel fuel, Pac. Spec. 200	$1.35 –$1.45	$1.35 –$1.45
Grade C fuel, Pac. Spec. 400	$0.85 –$0.90	$0.85 –$0.90

Pacific Export (Cont'd)

Prices Effective	May 13	May 6
Cased Goods: (Per case)		
U. S. M.	$1.45 –$1.55	$1.45 –$1.55
375-400 e.p. blend, 65 oct. & above	$1.60 –$1.70	$1.60 –$1.70
400 e.p. blend, under 65 oct.	$1.50 –$1.60	$1.50 –$1.60
40-43 grav. w.w. kero., 150 fire point	$1.40 –$1.50	$1.40 –$1.50
Kero., p.w.	$1.30 –$1.45	$1.30 –$1.45

Tanker Rates

(Approximate rates. Cents per bbl.)

Gulf-N. Atlantic: (not E. of N.Y.)	Last Paid	Owners Ask
H vy. Crude & fuel, (10 to 19.9 gravity)	68	68-70
Light Crude, (30 Grav. or Lighter)	60	60-62
Gasoline	54	54-60
Kerosine	57	57-59
No. 2 Fuel	60	60-62

Gulf Coast

(Prices for sales made or firm offers reliably reported for sales pending in cargoes FOB ship at Gulf for domestic and export for minimum of 20,000 bbls. Prices are by refiners only to other refiners, export agents, or to large tanker terminal operators at the customary trade specifications noted.)

MOTOR GASOLINE (ASTM Octane)

Prices Effective May 13

	60-62 Gravity, 400 e.p.	61-63 Gravity, 390 e.p.	64-66 Gravity, 375 e.p.
72-74 oct. leaded	4.50 –5.125	4.50 –4.625	4.50 –4.625
70 oct. unleaded	4.75	4.75	4.875
68 oct. unleaded	4.625	4.625	4.75
65 oct. unleaded	4.375–4.75	4.375	4.50
60 oct. unleaded	4.25–4.50	4.25	4.25

KEROSINE, GAS & FUEL OILS

	May 13	May 6
41-43 grav. w.w. kero.	4.50 – 4.625	4.50
Gas Oil (Less than ½ of 1% sulfur)		
Below 43 diesel index	3.50	3.50 – 3.75
43-47 diesel index	3.50 – 3.80	3.50 – 3.625
48-52 diesel index	3.50 – 3.75	3.50 – 3.75
53-57 diesel index	3.75 – 3.875	3.75 – 3.875
58 & above	4.00 – 4.125	4.00 – 4.125
No. 2 fuel	3.50 – 3.75	3.625 – 3.75
(g) Diesel oil, ships' bunkers	$1.70	$1.70
(g) Grade C, ships' bunkers	$0.90 –$0.95	$0.90 –$0.95
Grade C cargoes	$0.75 –$0.90	$0.75 –$0.85

MID-CONTINENT LUBES

(At Gulf; in packages, FAS.; in bulk FOB terminals)

	May 13 (l) Packages	Bulk
200 vis. D. 210 brt. stock	30.50–32.50 (2)	24.80–27.80 (2)
150 vis. D 210 brt. stock 0-10 p.p.	26.50–29.50 (2)	20.80–25.80 (2)
10-25 p.p.	26.00 (1)	20.30 (1)
100 vis. D 210 brt. stock 0-10 p.p.	25.50 (1)	19.80 (1)
10-25 p.p.	25.00 (1)	19.30 (1)
200 vis. No. 3 col. neutral:		
0-10 p.p.	19.50 (1)	13.80 (1)
10-25 p.p.	19.00 (1)	13.30 (1)
130 vis. No. 3 col. neutral:		
0-10 p.p.	19.00 (1)	13.30 (1)
10-25 p.p.	18.50 (1)	12.80 (1)

SOUTH TEXAS LUBES

(Vis. at 100°, c. t. 0. blk. exprt. shp., FOB terminals.)

Unfiltered Pale Oils: Vis. Color	May 13	May 6
100 No. 3	6.00 – 6.50	6.00 – 6.50
200 No. 3	7.50 – 8.50	7.50 – 8.50
300 No. 3	8.00 – 9.00	8.00 – 9.00
500 No. 3½	9.00 –10.50	9.00 –10.50
750 No. 4	9.50 –11.00	9.50 –11.00
1200 No. 4	10.00 –13.50	10.00 –13.50
2000 No. 4	10.25	10.25
Red Oils:		
Vis. Color		
100 No. 5-6	6.00 – 6.50	6.00 – 6.50
200 No. 5-6	7.50 – 8.50	7.50 – 8.50
300 No. 5-6	8.00 – 9.00	8.00 – 9.00
500 No. 5-6	9.00 –10.50	9.00 –10.50
750 No. 5-6	9.50 –11.00	9.50 –11.00
1200 No. 5-6	10.00 –13.50	10.00 –13.50
2000 No. 5-6	10.25	10.25

(g) Lighterage, additional at some points, not included. (i) Shipment in bags or in bulk. (j) Shipment in tight barrels. (l) New steel drums.

TANK WAGON PRICES

Commercial or consumer tank car, tank wagon, dealer, and service station prices for gasoline **do not include taxes;** *they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include 1c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes, where levied, are indicated in footnotes. Dealer discounts are shown in footnotes; for commercial consumer discounts, see NPN for Feb. 21, 1940. These prices in effect May 13, 1940 as posted by principal marketing companies at their headquarters offices, but subject to later correction.*

S. O. New Jersey

Esso (*Regular Grade*)

	Consumer Tank Car	Dealer T.W.	Gasoline Taxes	Kerosine T.W.
*Atlantic City, N. J.	7.6	8.7	4	8.4
*Newark, N. J.	7.6	8.7	4	8.4
Annapolis, Md.	8.35	9.35	5	9.50
Baltimore, Md.	7.75	8.75	5	9
Cumberland, Md.	9.15	10.15	5	10
Washington, D. C.	8.0	9	3	9.5
Danville, Va.	8.95	11.45	6	11.5
Norfolk, Va.	7.75	10.25	6	11
Petersburg, Va.	8.05	10.55	6	11.7
Richmond, Va.	8.05	10.55	6	11
Roanoke, Va.	9.25	11.75	6	11.5
Charleston, W. Va.	8.55	11.05	6	12.6
Parkersburg, W. Va.	7.85	9.85	6	11.2
Wheeling, W. Va.	8.85	10.75	6	11.8
Charlotte, N. C.	9.9	9.5	7	11.8
Hickory, N. C.	10.45	11.95	7	12.3
Mt. Airy, N. C.	10.3	11.8	7	12.2
Raleigh, N. C.	9.65	9.5	7	11.5
Salisbury, N. C.	9.95	9	7	11.9
Charleston, S. C.	7.75	10.25	7	9.25
Columbia, S. C.	8.6	11.1	7	11.5
Spartanburg, S. C.	9.3	11.8	7	12.2

	Mineral Spirits T.W.	V.M.&P. T.W.
Newark, N. J.	11.5	15.5
Baltimore, Md.	15.5	.....
Washington, D. C.	15	.....

*Effective Sept. 14, 1939, minimum retail resale price of 11.9c posted thru New Jersey.

Discounts:

Esso gasoline—to undivided dealers, 0.5c off dealer t.w. price, thru territory, except New Jersey. While above posted prices continue at Atlantic City and Newark, dealers will pay net price of 8.6c per gal. for Esso; dealers having pumps marked only Esso, Esso Extra and Standard White gasoline will pay 8.1c per gal. for Esso.

Kerosine—1c off t.w. price for 25 gals. or more, under contract thru territory (Baltimore city contract not necessary) except no discount in state of New Jersey.

Naphthas—To buyers taking following quantities at one time: Newark, 2c per gal. on 200 gals. or more, less than 200 gals. 0.5c higher price; Baltimore, 2c off on 25 to 100 gals. and 3c on over 100 gals.; Washington, 2c off to contract buyers.

Socony-Vacuum Oil Co., Inc.

Socony Mobilgas (*Regular Grade*)

	Consumer Tank Car	"Split" Dealer T.W.	Gasoline Taxes	††Kerosine T.W.
Metropolitan N. Y. City: Boroughs of Manhattan, Bronx and Brooklyn (Kings and Queens)	6.7	8.3	*5	8.8
Borough of Richmond (Staten Is.)	6.7	8.3	*5	8.8
Albany, N. Y.	6.6	8.6	5	8
Binghamton, N. Y.	7.9	9.5	5	9.1
Buffalo, N. Y.	7.6	9.5	5	8
Jamestown, N. Y.	7.2	9.2	5	7.8
Plattsburg, N. Y.	7.1	9.6	5	9.2
Rochester, N. Y.	7.8	9.8	5	8.4
Syracuse, N. Y.	7.2	8.4	5	8.7
Bridgeport, Conn.	6.8	7.8	4	8.3
Danbury, Conn.	7.3	8.6	4	9.3
Hartford, Conn.	6.9	8.8	4	8
New Haven, Conn.	6.8	7.8	4	7.8
Bangor, Me.	6.9	9.1	5	8
Portland, Me.	6.6	8	5	8.5
Boston, Mass.	6.5	7.5	4	8.5
Concord, N. H.	7.4	9.7	5	9.1
Lancaster, N. H.	8.2	10.7	5	10.2
Manchester, N. H.	7.3	8.7	5	8.9
Providence, R. I.	6.5	8	4	8.3
Burlington, Vt.	7.1	9.1	5	9
Rutland, Vt.	7.5	9.5	5	9.2

	Mineral Spirits T.W.	V.M.&P. T.W.
Buffalo, N. Y.	11.5	12.5
†New York City	8.9	9.5
Rochester, N. Y.	12.5	12.5
Syracuse, N. Y.	12.5	15
Boston, Mass.	11.5	11.5
Bridgeport, Conn.	11.5	12
Hartford, Conn.	11	11.5
Providence, R. I.	11.5	12.5

	Fuel Oils—T.W. Nos. 2 & 3	No. 4
New York City	7.30	7.30
Albany, N. Y.	7.50	7.00
Rochester, N. Y.	7.50	7.50
Boston, Mass.	7.50	7.50
Bangor, Me.	7.90	7.90
Manchester, N. H.	7.00	7.00
Burlington, Vt.	8.20	8.20

Fuel Oils—T.W.—(Cont'd)	Nos. 2 & 3	No. 4
Hartford, Conn.	7.7	7.7
New Haven, Conn.	7.70	7.70
Providence, R. I.	7.50	7.50

*Plus 2% city sales tax computed at time of each sale.

†Prices apply to consumers only in quantities over 1000 gals. annually; for quantities under 1000 gals. annually, add 0.5c per gal.

††Same prices apply for No. 1 fuel.

Discounts: Gasoline—To undivided dealers, 0.5c less than "split" dealer t.w.

Atlantic Refining

Atlantic White Flash Gasoline (*Regular Grade*)

	Commercial T.C.	Dealer T.W.	Gasoline Taxes	Kerosine T.W.
Philadelphia, Pa.	7	8.5	5	10.5
Pittsburgh	8	9.5	5	10.5
Allentown	8	9.5	5	10.5
Erie	8	9.5	5	10
Scranton	7.5	9	5	10.5
Altoona	8	10	5	10.5
Emporium	8	10	5	10.5
Indiana	8	10	5	10.5
Uniontown	8	10	5	10.5
Harrisburg	8	9.5	5	10.5
Williamsport	8.5	10	5	10.5
Dover, Del.	....	9	5	10.5
Wilmington	....	8.5	5	10
Boston, Mass.	....	7.5	4	8.5
Springfield, Mass.	....	9	4	9.0
Worcester, Mass.	....	8.1	4	8
Fall River, Mass.	....	8.5	4	8.5
Hartford, Conn.	....	8.8	4	8.5
New Haven, Conn.	....	7.8	4	8.5
Providence, R. I.	....	8	4	8.5
Atlantic City, N. J.	....	8.6	4	8.4
Camden, N. J.	....	8.6	4	8.1
Trenton, N. J.	....	8.6	4	8.4
Annapolis, Md.	....	9.35	5	10
Baltimore, Md.	....	8.75	5	9
Hagerstown, Md.	....	9.85	5	10
Richmond, Va.	....	10.55	6	11
Wilmington, N. C.	....	10.35	7	10.8
Brunswick, Ga.	....	10	7	*11
Jacksonville, Fla.	....	8	8	10

	Mineral Spirits T.W.†	V.M.&P. T.W.†
Philadelphia, Pa.	12	14.5
Lancaster, Pa.	13.5	16
Pittsburgh, Pa.	14.5	14.5

	Fuel Oils—T.W. 1	2	3	4	5	6
Phila., Pa.	8.5	7.00	7.00	7.00	4.25	3.50
Allentown, Pa.	8.5	6.5	6.5	6.5	.....	.....
Wilmington, Del.	8.00	7.00	7.00	7.00	.....	.....
Springfield, Mass.	9.0	8.0	.....	.....	.....	.....
Worcester, Mass.	8	7	.....	7	.....	.....
Hartford, Conn.	8.5	7.6	.....	7.6	.....	.....

*Does not include 1c Georgia kerosine tax.

†Mineral Spirits prices also apply to Stoddard Solvent; V.M.&P. prices also apply to Light Cleaners Naphtha.

Discounts:

Gasoline—to undivided dealers, 0.5c off dealer t.w., except Georgia & Florida dealer t.w. and undivided dealer t.w. prices are same. At Scranton, Pa., 1c per gal. voluntary discount allowed to dealers only.

Kerosine—Thru Penna. & Delaware, 2c off t.w. price on t.w. deliveries of 25 gals. or more at one time.

Naphthas—Philadelphia, 200 gals. or more at one time, 2c off Lancaster, contract buyers taking 1000 gals. or more per year, one drum up, 2c off; non-contract buyers, 200 gals. or more at one time, 2c off. Pittsburgh, 500 gals. or more at one time, 2c off.

S. O. Ohio

***Sohio X-70 Gasoline (*Regular Grade*)**

	Consumer T.W.	Divided Dlr.	‡S.S.	Gasoline Taxes	†Kerosine T.W.
Ohio, Statewide	10.5	9.5	12.5	5	8
Akron	10.5	8	9.5	5	8
Cincinnati	10.5	9	11.5	5	8
Cleveland	10.5	8.5	11	5	8
Columbus	10.5	9	11.5	5	8
Dayton	10.5	9	11.5	5	8
Marietta	10.5	9	11.5	5	8
Portsmouth	10.5	9.5	12.5	5	8
Toledo	10.5	7.5	9.5	5	8
Youngstown	10.5	9	11.5	5	7.5

	Esso Aviation Gasoline—Thru Ohio Consumer T.W.	Gasoline Taxes
74 octane	15.5	5
80 octane	16.5	5
87 octane	17.5	5

S. O. Ohio (Cont'd)

†Naphthas — Statewide	T.W.
S.R. Solvent	12.75
D.C. Naphtha	13.25
V.M.&P. Naphtha	13.25
Varnolene	13.25
Sohio Solvent	13.25

††Fuel Oils—T.W.	No. 1	No. 2	No. 3
Toledo	7.00	7.00	6.50
Rest of Ohio	7.50	7.50	7.00

*Renown (third-grade) prices are same as X-70 unless otherwise noted.

†Kerosine prices are ex 1c state tax. Naphtha prices are ex 1c federal & 4c state tax.

‡Prices at company-operated stations.

††Prices are for full compartment hose dumps; bucket dumps are 0.5c per gal. higher.

Discounts:

X-70 gasoline—to undivided dealers, 0.5c off dealer t.w.

Esso aviation—on contract to hangar operators and resellers, 2c off consumer t.w.

Naphthas—to contract consumers off t.w. prices: 300 to 999 gals., 0.5c; 1000 to 2499 gals., 0.75c; 2500 to 4999 gals., 1c; 5000 or more gals., 1.5c.

S. O. Kentucky

Crown Gasoline (*Regular*)
Standard or Kyso (*Third Grade*)

	Crown	††Standard or Kyso	Gasoline Taxes	Kerosine T.W.
Covington, Ky.	8.5	7.5	6	9.5
Lexington, Ky.	9.5	8	6	10
Louisville, Ky.	8.5	6.5	6	9
Paducah, Ky.	9.5	8	6	9
Jackson, Miss.	9	8	7	*9.5
Vicksburg, Miss.	9	8	7	*9
Birmingham, Ala.	9.5	8	*8	9
Mobile, Ala.	9	7.5	*9	8
Montgomery, Ala.	10	9	*9	*9
Atlanta, Ga.	10.5	8.5	7	*10
Augusta, Ga.	10	9	7	*9
Macon, Ga.	9.5	8.5	7	*10
Savannah, Ga.	9.5	8	7	*8
Jacksonville, Fla.	9	8	8	8
Miami, Fla.	9	8	8	8
Pensacola, Fla.	9	8	*9	8.5
Tampa, Fla.	12	9.5	8	8

*Taxes: In tax column are included these city and county gasoline taxes: Mobile, 2c city; Birmingham, 1c city; Montgomery, 1c city and 1c county; Pensacola, 1c city. Georgia and Montgomery, Ala. have 1c kerosine tax, Mississippi 0.5c, not included in above prices.

†Consumer t.w. prices are same as net dealer prices except at Tampa. Tampa consumer t.w. prices are Crown 9c, Standard 7c.

††Standard, a leaded 3rd grade, is sold in Ky., Ala., Ga., and Fla.; Kyso, an unleaded 3rd grade, is sold in Miss.

Discounts:

Gasoline—Tampa: Temporary discount of 3c on Crown, 2.5c on Standard, off Consumer T.W. prices which see above.

S. O. Indiana

Red Crown (*Regular Grade*)
Stanolind (*Third Grade*)

	Red Dealer Prices Crown Cons. T.W.	Red Crown	Stanolind	Gasoline Taxes	Kerosine T.W.
Chicago, Ill.	11.1	9.1	6.9	4	10
Decatur, Ill.	9.6	8.1	6	4	9.5
Joliet, Ill.	11.1	9.6	6.7	4	10
Peoria, Ill.	11.1	8.7	8.1	4	10
Quincy, Ill.	10.9	9.4	8.5	4	9.8
Indianapolis, Ind.	11.8	9.3	8.8	5	*10.2
Evansville, Ind.	11.6	10.1	9.1	5	*10.5
South Bend, Ind.	11.8	10.3	8.8	5	*10.2
Detroit, Mich.	9.6	8.1	7.1	4	7.6
Grand Rapids, Mich.	9.2	7.7	7.2	4	9
Saginaw, Mich.	8.2	8.7	8.2	4	9.3
Green Bay, Wis.	11.9	10.4	9.9	5	10.3
Milwaukee, Wis.	11.3	9.8	9.3	5	10.2
La Crosse, Wis.	11.5	10	9.5	5	10.4
Minneapolis-St. Paul	11.5	9.5	9	5	10.4
Duluth, Minn.	11.9	10.4	9.9	5	10.8
Mankato, Minn.	11.5	10	9.5	5	10.4
Des Moines, Ia.	10.9	8.4	7.4	4	*9.8
Davenport, Ia.	11.1	9.6	8.4	4	*10
Mason City, Ia.	11.3	9.8	6.9	4	*10.2
St. Louis, Mo.	10.7	8.7	7.5	*4	8
Kansas City, Mo.	10.4	8.9	6.9	*4	8
St. Joseph, Mo.	10.4	8.0	7.5	*4	7.9
Fargo, N. D.	11.2	11.2	10.7	5	11.6
Huron, S. D.	12	10.5	10	5	10.9
Wichita, Kans.	9.3	7.6	6	4	7.5

(Continued on next page)

TANK WAGON PRICES

Commercial or consumer tank car, tank wagon, dealer, and service station prices for gasoline **do not include taxes;** *they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include 1c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes, where levied, are indicated in footnotes. Dealer discounts are shown in footnotes; for commercial consumer discounts, see NPN for Feb. 21, 1940. These prices in effect May 13, 1940 as posted by principal marketing companies at their headquarters offices, but subject to later correction.*

S. O. Indiana (Cont'd)

Stanavo Aviation 73 Octane

Chicago, Ill.	14 9		
Detroit, Mich.	16 5		4
Milwaukee, Wis.	15 1		5
Minneapolis, Minn.	15.3		5
St. Louis, Mo.	14 5		3
Kansas City, Mo.	14 2		*4
Fargo, N. D.	16 5		5
Huron, S. D.	15 8		5

	Oleum Spirits	V.M.&P. Naphtha	Stanisol	*Taxes
	(Prices are base prices before discounts)			
Chicago	12 7	13	12 4	4
Detroit	15 2	14 2	15 7	4
K. C., Mo.	12 9	13 9	13 4	1
St. Louis	13 2	14 2	12 4	1
Milwaukee	13 8	14 8	14 3	5
Minnep'ls	14	15	12 7	5

†Fuel Oils—T.W.	No. 1 Fuel	Stanolex Furnace
Chicago	**6 50	6 50
Indianapolis		*7.5
Detroit		6 6
Milwaukee	8 2	7 7
Minneapolis	7 5	7.5
St. Louis	7.0	6.50
Kansas City	6 8	6 8

*Taxes: In gasoline tax column are included these city taxes—Kansas City, St. Joseph, and St. Louis, 1c. Indiana kerosine and fuel oil prices are ex 4c state tax; Iowa kerosine prices are ex 3c state tax. In naphtha tax column are included 1c federal tax and state taxes.

†Prices for small-lot deliveries range up to 2c higher than above prices.

**For 400 gals. & over; 150 to 399 gals., 7.25c; 1 to 149 gals., 8.25c.

S. O. Nebraska

Standard Red Crown Gasoline (*Regular Grade*)

	T.W.	Dealer	Gasoline Taxes	Kerosine T.W.
Omaha	10 5	8 9	6	9 0
McCook	11	8 4	6	9 5
Norfolk	11	8 9	6	9 9
North Platte	11 3	8 5	6	10.2
Scottsbluff	11 9	10	6	10 5

S. O. Louisiana

Esso (*Regular Grade*)

	Consumer Tank Car	Dealer T.W.	Gasoline Taxes	Kerosine T.W.
Little Rock, Ark.	7.25	9 75	7 5	10
Alexandria, La.	6 75	9 25	8	*9 5
Baton Rouge, La.	6 75	9 25	8	*9 5
New Orleans, La.	5 75	8 25	8	*10
Lake Charles, La.	6 75	9 25	8	*9
Shreveport, La.	5 5	8	8	*8
Lafayette, La.	7	9 5	8	*9
Bristol, Tenn.	10 25	9 75	8	12
Chattanooga, Tenn.	9 5	11	8	12
Knoxville, Tenn.	10	11 5	8	12.5
Memphis, Tenn.	8	9 5	8	11
Nashville, Tenn.	9	10 5	8	11.5

*New Orleans kerosine price is ex 1c parish tax, and all Louisiana kerosine prices are ex 1c state tax.

Discounts:

Esso gasoline—to undivided dealers, 0.5c off dealer t.w.

Humble Oil & Refining Co.

Humble Motor Fuel (*Regular Grade*)

	*T.W.	S.S.	Gasoline Taxes	Kerosine T.W.
Dallas, Tex.	7	11	5	6
Ft. Worth, Tex.	7	11	5	7
Houston, Tex.	8 5	12 5	5	8
San Antonio, Tex.	8	12	5	8

Thriftane

(Leaded, 67 Octane, Purple Gasoline)

Dallas	5 5	9	5
Ft. Worth	5 5	9	5
Houston	7	10 5	5
San Antonio	6	10	5

74 Octane Aviation Gasoline, Clear

	Tank Car
FOB Baytown, Tex.	8 5

*To all classes of dealers & consumers.

The Texas Co.

	Gasoline—Dealer T.W. Fire-Chief (*Regular*)	Indian (*3rd Grade*)	Gasoline Taxes
Dallas, Tex.	7	5	5
Ft. Worth, Tex.	7	5	5
Wichita Falls, Tex.	8	5	5
Amarillo, Tex.	8	5	5
Tyler, Tex.	8	5	5
El Paso, Tex.	8	7	5
San Angelo, Tex.	7 5	5	5
Waco, Tex.	7 5	5	5
Austin, Tex.	8 5	7	5
Houston, Tex.	8 5	7	5
San Antonio, Tex.	8	6	5
Port Arthur, Tex.	8 5	5	5

Continental Oil

Conoco Bronz-z-z (*Regular Grade*)

	†T.W.	Dealer	Gasoline Taxes	Kerosine ‡T.W.
Denver, Col.	8	..	5	10 5
Grand Junction, Col.	12 5	..	5	12 5
Pueblo, Col.	8	..	5	9
Casper, Wyo.	11 5	..	5	11 5
Cheyenne, Wyo.	9	..	5	11
Billings, Mont.	12	..	6	12
Butte, Mont.	10	..	6	13
Great Falls, Mont.	12	..	6	12
Helena, Mont.	10	..	6	12 5
Salt Lake City, Utah	10 5	10 5	5	14
Boise, Ida.	*15 1	*15 1	6	16
Twin Falls, Ida.	*15 1	*15 1	6	16 5
Albuquerque, N. M.	7	..	*6 5	10
Roswell, N. M.	9 5	9 5	*6 5	8
Santa Fe, N. M.	10 5	10 5	*7	10
Ft. Smith, Ark.	9 5	..	5	7 5
Little Rock, Ark.	9 25	..	7 5	8
Texarkana, Ark.	8	..	5	7
Muskogee, Okla.	7	..	5	7
Oklahoma City, Okla.	5	..	5	6 5
Tulsa, Okla.	6	..	5	6

Demand Gasoline (*Third Grade*)

Denver, Col.	6		5	....
Grand Junction, Col.	11 5		5	....
Pueblo, Col.	6		5	....
Casper, Wyo.	10 5		5	....
Cheyenne, Wyo.	8		5	....
Billings, Mont.	11		6	....
Butte, Mont.	9		6	....
Great Falls, Mont.	11		6	....
Helena, Mont.	9		6	....
Salt Lake City, Utah	9 5	9 5	5	....
Boise, Ida.	*14 1	*14 1	6	....
Twin Falls, Ida.	*14 1	*14 1	6	....
Albuquerque, N. M.	6		*6 5	....
Roswell, N. M.	8 5	8 5	*6 5	....
Santa Fe, N. M.	9 5	9 5	*7	....
Ft. Smith, Ark.	7		5	....
Little Rock, Ark.	7 5		7 5	....
Texarkana, Ark.	5		5	....
Muskogee, Okla.	6		5	....
Oklahoma City, Okla.	4.50		5	....
Tulsa, Okla.	5		5	....

Conoco Special Gasoline (Aviation)

	T.W. & Dealer Price	Gasoline Taxes
Denver, Colo.	15	5
Cheyenne, Wyo.	15 5	5
Helena, Mont.	22 5	6
Salt Lake City, Utah	18	5
Albuquerque, N. M.	14	*6 5

*Taxes: In gasoline tax column are included these city taxes—Albuquerque and Roswell, 0.5c; Santa Fe, 1c. Idaho prices include 0.1c to cover 1-mill tax for toll bridges.

†To consumers; also to dealers at points where no dealer prices are shown.

‡To consumers and dealers.

S. O. California

Standard Gasoline (*Regular Grade*)

	T.W.	S.S.	Gasoline Taxes	Kerosine T.W.
San Francisco, Cal.	13 5	14 5	4	11 5
Los Angeles, Cal.	13	14	4	10
Fresno, Cal.	14 5	15 5	4	12 5
Phoenix, Ariz.	14	15	6	*12 5
Reno, Nev.	15 5	16 5	5	13 5
Portland, Ore.	14	15	6	13 5
Seattle, Wash.	14	15	6	13 5
Spokane, Wash.	15 5	16 5	6	16 5
Tacoma, Wash.	14	15	6	13 5

Flight Gasoline (*Third Grade*)

San Francisco, Cal.	12	13	4	....
Los Angeles, Cal.	11 5	12 5	4	....
Fresno, Cal.	13	14	4	....
Reno, Nev.	14	15	5	....
Phoenix, Ariz.	11	12	6	....
Portland, Ore.	12 5	13 5	6	....
Seattle, Wash.	12 5	13 5	6	....
Spokane, Wash.	13	14	6	....
Tacoma, Wash.	12 5	13 5	6	....
Phoenix, Ariz.	17 5	..	6	....
Los Angeles, Cal.	15	..	4	....
San Francisco, Cal.	15 5	..	4	....
Reno, Nev.	17 5	..	5	....

S. O. California (Cont'd)

Stanavo Aviation Gasoline

Portland, Ore.	16	6	....
Seattle, Wash.	16	6	....
Spokane, Wash.	19	6	....

*Taxes: Arizona kerosine prices are ex 5c state tax.

Discounts:

To 100% dealers—3c off t.w. on Standard and Stanavo Aviation; 2c off t.w. on Flight.

Canada

PRICES OF IMPERIAL OIL LTD.

Per Imperial Gallon, which is 1.2 U. S. Gallons

3-Star Imperial Gasoline

	(*Regular Grade*) T.W.	Gasoline Taxes	Kerosine T.W.
Hamilton, Ont.	15 5	8	16
Toronto, Ont.	15 5	8	16
Brandon, Man.	21	7	22
Winnipeg, Man.	19 5	7	20 5
Regina, Sask.	18	7	20
Saskatoon, Sask.	21	7	23
Edmonton, Alta.	18	7	20
Calgary, Alta.	16	7	18
Vancouver, B. C.	16	7	23
Montreal, Que.	16	8	16 5
St. John, N. B.	15	10	19
Halifax, N. S.	15	10	19

Discounts: To undivided dealers, 1c off t.w. price, except Maritime Provinces where undivided dealers pay t.w. price. Divided dealers pay t.w. price thru territory.

Price Changes

(These changes have been made in price tables)

Socony-Vacuum—Mobilgas:

"Split" dealer t. w.: Plattsburg up 2c, May 3; Syracuse cut 0.6c, May 7; Manchester cut 0.6c, May 2; Providence cut 0.5c, May 3.

Atlantic Refining—White Flash:

Dealer t. w.: Providence cut 0.5c, May 4; Jacksonville cut 1c, May 4.

S. O. Ohio—Sohio X-70:

Akron service station cut 0.5c, May 1.

S. O. Kentucky—Crown:

Tampa consumer t. w. cut 4c, April 19.

S. O. Kentucky—Standard:

Tampa consumer t. w. cut 4.5c, April 19.

S. O. Indiana—Red Crown:

Decatur consumer t. w. cut 1.5c, May 8.

S. O. Nebraska—Standard Red Crown:

McCook and Norfolk t. w. and dealer up 0.5c, May 1.
Omaha t. w. cut 1c, May 1; up 1c, May 8.
North Platte t. w. cut 0.5c, May 1.
Scottsbluff t. w. cut 0.6c, May 1.
Omaha dealer up 1.4c, May 1; up 1c, May 8.
North Platte and Scottsbluff dealer up 0.5c, May 1.

S. O. Nebraska—Kerosine:

McCook and Scottsbluff t. w. up 0.5c, May 1.
Norfolk t. w. up 0.4c, May 1.
North Platte t. w. up 0.2c, May 1.

Humble Oil & Refining—Kerosine:

Dallas t. w. cut 1c, April 25.

The Texas Co.—Fire Chief:

Correction: Price cuts listed for Dallas, Ft. Worth, San Angelo, and Waco in N.P.N. of May 8, page 43, were effective May 2 instead of April 2.

Dealer Exemption Told In U.S. Wage-Hour Law

N. P. N. News Bureau

WASHINGTON, May 13.—U. S. Wage-Hour Division has clarified further its interpretation of Wage-Hour law as it applies to exemption for dealers in automobiles and automotive parts from the standpoint of "retail and service establishments." Statement prepared by Division's general counsel points out exemption of Section 13a (2) of Act applies only to employes engaged in retail or service "establishments".

Further defining this exemption, statement declares that "where a single motor car dealer operates two or more establishments, the sales of each establishment must be considered separately in order to determine whether such establishment may properly be classified as a 'retail establishment' under the Act."

Total sales of the enterprise as a whole will not determine retail or non-retail character of separate establishment within the business. Employes engaged in a wholesale establishment are not exempt from the Wage and Hour provisions, even though the wholesale establishment is operated by a firm which also conducts a large retail business. Accordingly, division pointed out "an automobile dealer may sell motor cars at retail in one place and automobile parts at wholesale (to garages, dealers, and fleet accounts) in a department which is distinct and separate from the retail branch—as where a room or rooms are set aside for the selling of parts." Under these circumstances, the parts business taken alone should be considered a wholesale establishment and the exemption would not apply to employes engaged therein.

Penn Webb Moves Offices

The Penn Webb Oil Co., Cleveland compounder, has moved its warehouse to a new location on Lisbon Road, and after May 15th the company's offices will be located in the Leader Building, East 6th St. and Superior Ave., according to Ralph E. Briggs, president.

Virginia Car Sales Increase

RICHMOND, Va., May 13.—Automobile tag sales in Virginia show current increase of 3% over similar period in 1939, Division of Motor Vehicles reports. A total of 390,490 vehicle tags were issued to Virginia owners from March 15 to April 30, as against 379,512 from March 15 through April 30, 1939, an increase of 10,978 tags. Total receipts from tags, automobile titles and bus lines, amounted to $5,090,430.15 for 1940 period, a $118,891.58 increase over 1939 receipts.

A 5% increase in total tag sales this year is expected by end of 1940, Division officials said.

Coming Meetings

MAY

International Petroleum Exposition and Congress, Tulsa, Sat.-Sat., May 18-25.

National Assn. of Credit Men, Annual Convention; Petroleum Group meets May 21 and 22; Royal York Hotel, Toronto, Canada, Sun.-Thurs., May 19-23.

American Gas Assn., Technical Section— Production Conference, Hotel Pennsylvania, New York, New York, Mon., Tues. and Wed., May 20-22.

American Petroleum Institute, 10th Mid-Year Meeting, Blackstone & Texas Hotels Fort Worth, Tex., Mon.-Fri., May 27-31.

JUNE

National Oil Scouts' & Landmen's Assn., 17th Annual Convention, Arlington Hotel, Hot Springs National Park, Ark., Thur.-Sat., May 30-June 1.

Illinois-Indiana Petroleum Assn., Eighth Annual Petroleum Conference, Robinson, Ill., Sat., June 1.

National Assn. of Purchasing Agents (Oil Company Buyers' Group) Annual Convention, Netherland-Plaza Hotel, Cincinnati, Ohio, Mon.-Thurs., June 3-6.

National Weights and Measures Conference, Washington Hotel, Washington, D. C., Tues.-Fri., June 4-7.

New Jersey Oil Trade Assn., Annual Summer Golf Outing, Suburban Golf Club, Union, N. J., Thurs., June 6.

Oil Trades Ass'n of New York, Sports Day, Pelham Country Club, Pelham, N. Y., Tues., June 11.

Gasoline Pump Manufacturers Assn., Annual Meeting, The Greenbrier, White Sulphur Springs, W. Va., Tues. and Wed., June 11-12.

Society of Automotive Engineers, Summer Meeting, The Greenbrier, White Sulphur Springs, W. Va., Sun.-Fri., June 9-14.

National Retail Credit Assn., Annual Convention; Petroleum Group meets June 18-20. Gunter Hotel, Mon.-Thurs., June 17-20.

Southwest Petroleum Credit Group, San Antonio, Tex., Mon.-Thurs., June 17-20.

American Society of Mechanical Engineers, Milwaukee, Wis., Mon.-Thurs., June 17-20

Pennsylvania Grade Crude Oil Assn., 17th Annual Meeting, Hotel Emery, Bradford, Penna., Thurs.-Fri., June 20-21.

American Society for Testing Materials, Chalfonte-Haddon Hall, Atlantic City, N. J., Mon.-Fri., June 24-28.

AUGUST

National Assn. of Petroleum Retailers, 8th Annual Convention, LaSalle Hotel, Chicago, Ill., Tues.-Thurs., Aug. 20-22.

SEPTEMBER

American Society of Mechanical Engineers, Spokane, Wash., Tues.-Thurs., Sept. 3-5.

American Chemical Society, Detroit, Mich., Mon.-Fri., Sept. 9-13.

Oil Trades Assn. of New York, Sports Day, Pelham Country Club, Pelham, N. Y., Tues., Sept. 17.

National Petroleum Assn., Hotel Traymore, Atlantic City, N. J., Wed.-Fri., Sept. 18-20.

OCTOBER

National Lubricating Grease Institute, Annual Convention, Stevens Hotel, Chicago, Ill., Mon.-Tues., Sept. 30, Oct. 1.

American Gas Assn., Atlantic City, New Jersey, Mon.-Thurs., Oct. 7-10.

National Safety Congress & Exposition, Hotel Stevens, Chicago, Ill., Mon.-Fri., Oct. 7-11.

Indiana Independent Petroleum Assn., Fall Convention, Hotel Severin, Indianapolis, Ind., Wed. and Thurs., Oct. 9-10.

Automobile Manufacturers Assn., 1940 Autoshow, New York, Sat., Oct. 12.

Independent Petroleum Assn. of America, Annual Meeting, Dallas, Texas, Wed.-Fri., Oct. 16-18.

Oil Trades Assn. of New York, Annual Banquet Waldorf-Astoria Hotel, New York, N. Y., Tues., Oct. 29.

NOVEMBER

Texas Mid-Continent Oil & Gas Assn., Fort Worth, Tex., Thurs.-Sat., Oct. 31-Nov. 2.

American Petroleum Institute, 21st Annual Meeting, Stevens Hotel, Chicago, Ill., Mon.-Fri., Nov. 11-15.

DECEMBER

Exposition of Chemical Industries, Grand Central Palace, New York, N. Y., Sun.-Fri., Dec. 1-6.

MARCH, 1941

American Society for Testing Materials, Hotel Mayflower, Washington, D. C., March 3-7.

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CRUDE OIL MARKETS

Prices in $ per bbl. of 42 U. S. gals. at the well. A. P. I. gravity. Prices are effective as of 7 a. m. of dates as given

EASTERN FIELDS

Posted by Joseph Seep Purchasing Agency (Jan. 1, 1940, except Corning Nov. 4, 1939)

Bradford-Allegany (Penna. and N. Y.) $2.75
Penna. Grade Oil in Southwest Penna. Pipe Lines $2.40
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) $2.34
Corning Oil in Buckeye Pipe Lines (Ohio) $1.12

Posted by Other Companies

Tide Water Associated Oil Co.
Bradford-Allegany district (Penna. and N. Y.) (Jan. 1, 1940) $2.75
*The Pennzoil Co.: (Jan. 1, 1940)
Penna. Grade Oil in National Transit Lines*$2.68
*The Pennzoil Co. posts $2.68 in Cochran, Franklin, Hamilton and Doolittle, Pa. fields, prices in other lower districts range down to $2.63 per bbl. at well.

MICHIGAN

Posted by Pure Oil Co. (Oct. 9, 1939)

Midland, Midland County $1.02
Sherman $0.97
Clare-Freeman $0.97

Posted by Simrall Corp. (Oct. 9, 1939)

Crystal, Greendale, Porter, Vernon and Wise $1.02
Beaverton, Buckeye, Bentley, Edenville $1.00
Freeman and Redding $0.97
Arenac $0.82
West Branch (Nov. 1, 1939) $0.85

Posted by Sohio Corp. (Michigan Division) (April 27, 1940)

Allegan and Kent Counties $1.08
Van Buren County (May 1, 1940) $1.08

Posted by Bay Pipe Line Corp. (Oct. 9, 1939)

Bentley and Buckeye $1.00
Saginaw and Wise $1.02 Clare $0.76

CENTRAL STATES FIELDS

Posted by Ohio Oil Co. (June 8, 1939)

Illinois and Western Indiana $0.95
Illinois Basin $1.05

Posted by Sohio Corp.

Illinois Basin:
Salem (Lake Centralia) (Oct. 21, 1939) $1.05
Balance of Illinois Basin (June 8, 1939) $1.05
Griffin (Ind.) pool, sand wells (Oct. 10, 1939) $0.95
Griffin (Ind.) pool, McCloskey lime $0.85

Posted by Carter Oil Co. (June 10, 1939)

Louden, Fayette County, Ill. $1.05

Posted by Mohawk Oil Lines, Inc. (May 1, 1940)

Southern Illinois $0.85

Posted by Ashland Oil & Transportation Co. (June 9, 1939)

Somerset Oil in Ashland Lines, Kentucky:
Big Sandy River ..$1.02 Kentucky River ..$1.10

Western Kentucky

Posted by Sohio Corp. (June 9, 1939)

Burk City Area $0.90
Corydon Area (Henderson) $0.90

Posted by Owensboro-Ashland Co.

Owensboro Area (June 9, 1939) $1.00

CANADIAN FIELDS

Posted by Imperial Oil Limited
Western Ontario (Nov. 6, 1939)

Petrolia .....$2.10 Oil Springs $2.17

Alberta Turner Valley (Jan. 5, 1938)
(Prices f.o.b. field tankage)

Crude Oil

40-40.9°	$1.14	53-53.9	$1.40
41-41.9	1.16	54-54.9	1.42
42-42.9	1.18	55-55.9	1.44
43-43.9	1.20	56-56.9	1.46
44-44.9	1.22	57-57.9	1.48
45-45.9	1.24	58-58.9	1.50
46-46.9	1.26	59-59.9	1.52
47-47.9	1.28	60-60.9	1.54
48-48.9	1.30	61-61.9	1.56
49-49.9	1.32	62-62.9	1.58
50-50.9	1.34	63-63.9	1.60
51-51.9	1.36	64-64.9	1.62
52-52.9	1.38		

Crude Naphtha, 65 grav. & above $2.14

Absorption Gasoline

90% Rec., 20 lb. Reid v.p. $1.94
90% Rec., 17 lb. Reid v.p. $2.08

MID-CONTINENT—Oklahoma-Kansas

*(For effective dates, see footnote)

	S. O. Indiana	Carter Mag-nolia Shell	Conti-nental Texas Co.	Sin-clair Prairie
Below 21°	$0.70	$0.60	....	....
21-21.9	.72	.63	....	....
22-22.9	.74	.66	....	....
23-23.9	.76	.69	....	....
24-24.9	.78	.72	....	....
25-25.9	.80	.75	....	$0.58
26-26.9	.82	.78	....	.63
27-27.9	.84	.81	....	.68
28-28.9	.86	.84	$0.86	.73
29-29.9	.88	.87	.88	.78
30-30.9	.90	.90	.90	.82
31-31.9	.92	.92	.92	.86
32-32.9	.94	.94	.94	.90
33-33.9	.96	.96	.96	.96
34-34.9	.98	.98	.98	.98
35-35.9	1.00	1.00	1.00	1.00
36-36.9	1.02	1.02	1.02	1.02
37-37.9	1.04	1.04	1.04	1.04
38-38.9	1.06	1.06	1.06	1.06
39-39.9	1.08	1.08	1.08	1.08
40 & above	1.10	1.10	1.10	1.10

*Effective in 1938 by Carter Oil, Oct. 13, posting in Okla. only: Continental Oil, Oct. 11, with lowest grade below 29; Magnolia, Oct. 12, posting in Okla. only; Shell, Oct. 22; S. O. Indiana, Oct. 17; The Texas Co., Oct. 12. Aug. 31, 1939, by Sinclair-Prairie.

North-North Central and Central Texas
*(For effective dates, see footnote)

	Stano-lind	Sinclair Texas Co. Conti-nental Magnolia
Below 21°	$0.60	....
21-21.9	.62	....
22-22.9	.64	....
23-23.9	.66	....
24-24.9	.68	$0.79
25-25.9	.70	for
26-26.9	.72	oil
27-27.9	.74	below
28-28.9	.76	29°.
29-29.9	.78	.81
30-30.9	.80	.83
31-31.9	.82	.85
32-32.9	.84	.87
33-33.9	.86	.89
34-34.9	.88	.91
35-35.9	.90	.93
36-36.9	.92	.95
37-37.9	.94	.97
38-38.9	.96	.99
39-39.9	.98	1.01
40 & above	1.00	1.03

*Effective Oct. 11, 1938 by Continental, in North Tex.; Oct. 12, 1938, by Texas Co. in North & North Central Texas. Texas Co.'s lowest grade is 28-28.9, at $0.79; by Magnolia, Dec. 3, 1938, in N. and N. Central Texas; Oct. 5, 1939 by Sinclair Prairie in Mexia and N. Cent. Texas.

Jefferson County, Texas—Beaumont

(Posted by Magnolia Petroleum Co., Effective Oct. 2, 1939, and by Stanolind Oil & Gas Co., for West Beaumont, Effective Oct. 2, 1939)

Below 20°	$0.86	30-30.9	$1.08
20-20.9	.88	31-31.9	1.10
21-21.9	.90	32-32.9	1.12
22-22.9	.92	33-33.9	1.14
23-23.9	.94	34-34.9	1.16
24-24.9	.96	35-35.9	1.18
25-25.9	.98	36-36.9	1.20
26-26.9	1.00	37-37.9	1.22
27-27.9	1.02	38-38.9	1.24
28-28.9	1.04	39-39.9	1.26
29-29.9	1.06	40 & above	1.28

TEXAS FIELDS

Posted by Humble Oil & Refining Co.

*West Central Texas (Aug. 11, 1939)

24-24.9	$0.71	33-33.9	$0.89
25-25.9	.73	34-34.9	.91
26-26.9	.75	35-35.9	.93
27-27.9	.77	36-36.9	.95
28-28.9	.79	37-37.9	.97
29-29.9	.81	38-38.9	.99
30-30.9	.83	39-39.9	1.01
31-31.9	.85	40 & above	1.03
32-32.9	.87		

*Includes Brown, Callahan, Coleman, Comanche, Eastland, Fisher, Haskell, Jones, Shackelford, Stephens, Throckmorton and Young Counties.

Effective Aug. 29, 1939, Shell posted in Fisher county, Tex., prices 3c lower than Humble's West Central Texas prices; Shell's schedule begins with below 25, at $0.68 and ends with 40 & above, at $1.

Note: Effective Oct. 1, 1937, Humble prices are based on 100% tank tables at 60F.

*East Central Texas (Aug. 11, 1939)

23-23.9	$0.78	32-32.9	$0.96
24-24.9	.80	33-33.9	.98
25-25.9	.82	34-34.9	1.00
26-26.9	.84	35-35.9	1.02
27-27.9	.86	36-36.9	1.04
28-28.9	.88	37-37.9	1.06
29-29.9	.90	38-38.9	1.08
30-30.9	.92	39-39.9	1.10
31-31.9	.94	40 and above	1.12

Posted by Pan American Pipe Line Co. (Oct. 2, 1939)

Cayuga, Anderson county $0.78
*Including Anderson, Cherokee, Limestone, Navarro counties.

PANHANDLE TEXAS

	Humble (Aug. 11, 1939) Carson Gray County	Hutchin-son	Texas Co. (Oct. 2, 1939) Sweet	Sour
28-28.9	$0.72	$0.67	....	....
29-29.9	.74	.69	....	....
30-30.9	.76	.71	....	....
31-31.9	.78	.73	....	....
32-32.9	.80	.75	....	....
33-33.9	.82	.77	....	....
34-34.9	.84	.79	$0.84	$0.79
35-35.9	.86	.81	.86	.81
36-36.9	.88	.83	.88	.83
37-37.9	.90	.85	.90	.85
38-38.9	.92	.87	.92	.87
39-39.9	.94	.89	.94	.89
40 & above	.96	.91	.96	.91

Effective Aug. 31, 1939, Sinclair Prairie met Humble in Panhandle Texas. Dec. 3, 1938, Magnolia posted same schedule as Humble.

***EAST TEXAS**

By Humble, Shell, Sinclair-Prairie, Stanolind, Gulf, Magnolia, Texas Co., Tide Water-Associated $1.10
*Effective dates: Aug. 11, 1939, by Humble and Tide Water-Associated; Aug. 29, 1939, by Stanolind; Oct. 2, 1939 by Sinclair Prairie; Oct. 5, 1939 by Shell; Oct. 12, 1938, by Magnolia, Texas Co.; Oct. 13, 1938, by Gulf.
*Includes Cherokee, Gregg, Rusk, Smith and Upshur counties.

Posted by Shell Oil Co., Inc. (Oct. 5, 1939)

Polk County, Tex. (Livingston area) $1.10

NORTHEAST TEXAS

(Posted by Humble, Oct. 2, 1939)

Talco $0.65

(Posted by Magnolia, Oct. 12, 1938)

Cass County and Panola County, Tex.:
Magnolia posts below 25° at $0.73, plus 2c differential for each degree, to top grade of 40 & above, at $1.05.

(Posted by The Texas Co., Oct. 12, 1938)

Cass County $1.05

WEST TEXAS and NEW MEXICO

(a) (For effective dates, see footnote)

	Humble	Stano-lind	Shell	Texas Co. Sinclair (c)
Below 20°	$0.53	....	$0.53	....
20-20.9	.55	....	.55	....
21-21.9	.57	....	.57	....
22-22.9	.59	$0.67	.59	....
23-23.9	.61	for	.61	....
24-24.9	.63	oil	.63	....
25-25.9	.65	Below	.65	$0.65
26-26.9	.67	26°.	.67	.67
27-27.9	.69	.69	.69	.69
28-28.9	.71	.71	.71	.71
29-29.9	.73	.73	.73	.73
30-30.9	.75	.75	.75	.75
31-31.9	.77	.77	.77	.77
32-32.9	.79	.79	.79	.79
33-33.9	.81	.81	.81	.81
34-34.9	.83	.83	.83	.83
35-35.9	.85	.85	.85	.85
36-36.9	.87	.87	.87	.87
37-37.9	.89	.89	for	for
38-38.9	.91	.91	oil	oil
39-39.9	.93	.93	36° &	36° &
40 & above	.95	.95	above.	above.

Posted by Magnolia Petroleum Co.

(Oct. 12, 1938 in West Texas; Oct. 15, 1939 in Lea County, N. Mex.)

	West Texas	N. Mex.		West Texas	N. Mex.
Below 25	$0.63	$0.63	33-33.9	$0.81	$0.81
25-25.9	.65	.65	34-34.9	.83	.83
26-26.9	.67	.67	35-35.9	.85	.85
27-27.9	.69	.69	36-36.9	.87	.87
28-28.9	.71	.71	37-37.9	.89	for
29-29.9	.73	.73	38-38.9	.91	oil
30-30.9	.75	.75	39-39.9	.93	36 &
31-31.9	.77	.77	40 & over.	.95 above	
32-32.9	.79	.79			

Note: Magnolia's West Texas postings are in Crane, Glasscock, Howard, Mitchell, Upton and Winkler counties.

Pecos County, West Texas

(Posted by Humble Aug. 11, 1939 and Shell, Aug. 29 '39)

Pecos $0.78
Yates Shallow Pool (Shell only) ..... .65

Posted by Sinclair Prairie Oil Marketing Co.

(Aug. 31, 1939)

Eddy county, N. Mex. $0.77
(a) Effective Aug. 11, 1939 by Humble; Shell Oil, Aug. 29, 1939; by The Texas Co., Oct. 12, 1938; Stanolind, Aug. 29, 1939; Sinclair Prairie, Aug. 31, 1939.
(c) Texas Co. posts $0.65 for below 26; Sinclair Prairie, $0.63 for below 25.
Note: Humble's postings are in these counties: Andrews, Crane, Crockett, Ector, Gaines, Glasscock, Howard, Reagan, Upton, Winkler and Yoakum, West Texas; and Lea county, N. Mex.; Shell, in Crane, Ector, Glasscock, Howard, Upton, Winkler, Yoakum, Lea; Stanolind in Hendrick and Henderson field, Winkler county; Texas Co. in Ward, Winkler and Lea.

Posted by Continental Oil Co.

(Oct. 11, 1938)

Artesia, Jackson and Maljamar pools, New Mexico; gravity schedule beginning with below 29, at $0.61; 29-29.9, at $0.63; plus 2c differential for each gravity, up to 40 & above, at $0.85.

COLORADO

Posted by Continental Oil Co. (Oct. 11, 1938)
Ft. Collins and Wellington

Below 29	$0.81	35-35.9	$0.95
29-29.9	.83	36-36.9	.97
30-30.9	.85	37-37.9	.99
31-31.9	.87	38-38.9	1.01
32-32.9	.89	39-39.9	1.03
33-33.9	.91	40 & above	1.05
34-34.9	.93		

Canon City and Florence, Col. $0.90

SOUTH AND SOUTHWEST TEXAS

All Shown Below Posted by Humble Oil & Refining Co. (Aug. 11, 1939)

Carroll, Clark, Darst Creek, Hilbig, Salt Flat and Zoboroski crudes $0.96
Van crude $0.93
Conroe $1.27

(Oct. 2, 1939)

Flour Bluff and Jim Wells County $1.23

(Sept. 14, 1939)

Hardin, Liberty county $1.10

Oct. 12, '38, Magnolia posted $0.96 in Darst Creek; $0.87 in Luling; $0.99 in Lytton Springs; $1.14 for Cleveland, and $1.02 in Hardin, both in Liberty county, Tex.

Oct. 12, '38, The Texas Co. posted $0.96 in Darst Creek.

(Continued on next page)

CRUDE OIL MARKETS

(*Continued from preceding page*)

***Anahuac-Dickinson** (Oct. 2, 1939)

Below 20°	$0.81	30-30.9	$1.03
20-20.9	.83	31-31.9	1.05
21-21.9	.85	32-32.9	1.07
22-22.9	.87	33-33.9	1.09
23-23.9	.89	34-34.9	1.11
24-24.9	.91	35-35.9	1.13
25-25.9	.93	36-36.9	1.15
26-26.9	.95	37-37.9	1.17
27-27.9	.97	38-38.9	1.19
28-28.9	.99	39-39.9	1.21
29-29.9	1.01	40 & above	1.23

*Anahuac-Dickinson includes Cedar Point, Fairbanks, Gillock, Hull, Pierce Junction and Raccoon Bend (shallow sand) and Turtle Bay.

Raccoon Bend (Deep sand crude) Tomball and Satsuma (Aug. 11, 1939)

22-22.9	$0.95	32-32.9	$1.15
23-23.9	.97	33-33.9	1.17
24-24.9	.99	34-34.9	1.19
25-25.9	1.01	35-35.9	1.21
26-26.9	1.03	36-36.9	1.23
27-27.9	1.05	37-37.9	1.25
28-28.9	1.07	38-38.9	1.27
29-29.9	1.09	39-39.9	1.29
30-30.9	1.11	40 & above	1.31
31-31.9	1.13		

Dec. 3, 1938, Magnolia posted above price and gravity schedule in Tomball. Effective Aug. 29, 1939, Stanolind met Humble in Tomball, except that Stanolind's schedule begins with below 29 at $1.07.

LOUISIANA-ARKANSAS

Posted by Standard Oil Co. of Louisiana

(†) (For effective dates, see footnote)

	*N. La. Ark. Sweet	Bunkie Eola, La.	*South La. Sour	*Ark. Sour	Baton Rouge-University
Below 20°					$0.79
20-20.9	$0.73	$0.83	‡$0.74	$0.63	.82
21-21.9	for	for	77	for	.85
22-22.9	oil	oil	80	oil	.88
23-23.9	Below	Below	83	Below	.91
24-24.9	25°.	25°.	86	25°.	.94
25-25.9	.75	.85	89	.65	.97
26-26.9	.77	.87	92	.67	1.00
27-27.9	.79	.89	.94	.69	1.02
28-28.9	.81	.91	.96	.71	1.04
29-29.9	.83	.93	.98	.73	1.06
30-30.9	.85	.95	1.00	.75	1.08
31-31.9	.87	.97	1.02	.77	1.10
32-32.9	.89	.99	1.04	.79	1.12
33-33.9	.91	1.01	1.06	.81	1.14
34-34.9	.93	1.03	1.08	.83	1.16
35-35.9	.95	1.05	1.10	.85	1.18
36-36.9	.97	1.07	1.12	.87	1.20
37-37.9	.99	1.09	1.14	.89	1.22
38-38.9	1.01	1.11	1.16	.91	1.24
39-39.9	1.03	1.13	1.18	.93	1.26
40 & above	1.05	1.15	1.20	.95	1.28

(Aug. 30, 1939)

Smackover, Ark	$0.73
Cotton Valley Distillate	$1.20

*N. La.-Ark. Sweet includes Caddo, Cotton Valley, Cross Lake, De Soto, Haynesville, Homer, Rodessa, Sabine and Sligo, La. crudes, and Miller county, Ark. S. La. Sour includes Choctaw, Darrow, N. Crowley, Roanoke and St. Martinsville. S. Ark. Sour includes Buchner, Magnolia and Village pools.

†N. La.-Ark. Sweet crude and S. La. Sour effective Aug. 30, 1939, except Cross Lake, La., Sept. 7, Baton Rouge-Univ., Sept. 11, and Bunkie and Eola, Oct. 23, 1939; and Ark. Sour, Sept. 13, 1939.

‡For Below 21°.

Effective Sept. 8, 1939, Gulf Refg. Co. met S. O. La's. N. La.-Ark. Sweet prices in Bull Bayou, Caddo, Crichton, De Soto, Haynesville, Homer, and El Dorado.

Posted by Arkansas Fuel Oil Corp.

Urania, La. (Jan. 28, 1937)	$1.02

Posted by Continental Oil Co.

(Oct. 11, 1938)

Tepetate and Ville Platte, La.	$1.03

(Jan. 1, 1939)

Abbeville, La.

Below 36	$0.92	38-38.9	$0.98
36-36.9	.94	39-39.9	1.00
37-37.9	.96	40 & above	1.02

Posted by Caddo Crude Oil Purchasing Corp.

(Aug. 14, 1939)

Allison area, Shreveport field	$0.95

Lisbon, N. La. (Sept. 14, 1939)

27-27.9	$0.66	32-32.9	$0.76
28-28.9	.68	33-33.9	.78
29-29.9	.70	34-34.9	.80
30-30.9	.72	35 & above	.82
31-31.9	.74		

Lisbon prices met by Gulf, Sept. 14.

Note: S. O. Louisiana prices in all La.-Ark. fields, effective Oct. 5, 1938, are on 100% tank table basis.

GULF COASTAL FIELDS

(a) **(For effective dates, see footnote)**

	Continental Humble Sinclair Stanolind	Refugio Crude (Humble, Continental)	Texas Co.	Shell
Below 20	$0.86	$0.91	$0.86	(b)$0.79
20-20.9	.88	.93	.88	.81
21-21.9	.90	.95	.90	.83
22-22.9	.92	.97	.92	.86
23-23.9	.94	.99	.94	.89
24-24.9	.96	1.01	.96	.92
25-25.9	.98	1.03	.98	.95
26-26.9	1.00	1.05	1.00	.98
27-27.9	1.02	1.07	1.02	1.00
28-28.9	1.04	1.09	1.04	1.02
29-29.9	1.06	1.11	1.06	1.04
30-30.9	1.08	1.13	1.08	1.06
31-31.9	1.10	1.15	1.10	1.08
32-32.9	1.12	1.17	1.12	1.10
33-33.9	1.14	1.19	1.14	1.12
34-34.9	1.16	1.21	1.16	1.14
35-35.9	1.18	1.23	for oil	for oil
36-36.9	1.20	1.25	for oil	for oil
37-37.9	1.22	1.27	34° & above.	34° & above.
38-38.9	1.24	1.29		
39-39.9	1.26	1.31		
40 & above	1.28	1.33		

(*Continued in next column*)

(a) Effective Oct. 2, 1939 by Continental, Humble and Texas Co.; Oct. 3, 1939 by Sinclair and Stanolind; Aug. 29, 1939 by Shell. Stanolind's lowest grade is below 21, at $0.88. Refugio, effective Oct. 2, '39 by Humble.

(b) Shell posts these prices in Iowa district, Black Bayou and White Castle, La.; prices in Iowa district have 2 lower grades: below 18, at $0.75, 18-18.9, $0.77; and 19-19.9, is $0.79.

Note: Humble's Gulf Coast prices apply in these Texas fields: Amelia, Clear Lake, Goose Creek, Mirando which includes Duval, Jim Hogg, Webb and Zapata counties and Heyser and Placedo fields; Mykawa, Sugarland, Thompsons and Webster.

Humble's prices in Refugio include crudes purchased in Saxet, East White Point, Greta, O'Connor-McFadden, Taft, Plymouth and Tom O'Connor fields.

Stanolind's prices apply in High Island and Spindletop; also in Clinton, Hastings and South Houston, where, effective Jan. 1, 1940, lowest grade is below 21° at $0.88; rest of schedule same as other Gulf Coast. Magnolia posts Mirando, effective Oct. 2, same prices as Humble. Texas Co.'s prices are in Texas and La., Gulf Coast; its prices on Refugio are same as Humble's up to 28 gravity; 28 & above, $1.09; on Duval-Mirando same as Humble's up to 28; 28 & above, $1.04; it posts Golden Meadow, La., 24-30 grav., $0.90, plus 2c differential, to 40 & above, $1.10.

Posted by Shell Oil Co., Inc. (Aug. 29, 1939)

Gibson field, Terrebonne Parish, La.	$1.04

ROCKY MOUNTAIN FIELDS

Posted by Stanolind Oil & Gas Co.

(Effective Oct. 11, 1938)

Salt Creek, (except Tensleep crude), Midway and Dutton Creek, Wyo., same schedule as Stanolind posts in Oklahoma-Kansas, ranging from $0.86 to $1.10, which see under Mid-Continent crude on previous page.

Tensleep, Salt Creek field	$0.646
Iles, heavy	0.92
Elk Basin, light	0.90
Grass Creek, light	0.90
Frannie light	0.55
Grass Creek, heavy	0.40
Hamilton Dome, Wyo.	0.35
Frannie heavy	0.42

Posted by Ohio Oil Co. (Oct. 11, 1938)

Elk Basin, Wyo.	$0.90	Rock Creek	1.00
Grass Creek, light	0.90	Lance Creek	0.77
Dry Creek, Mont.			0.92
Grass Creek, heavy (May 1, 1938)			$0.50
Sunburst, Mont. (Nov. 16, 1937)			$0.90

Posted by Continental Oil Co.

(Oct. 11, 1938)

Cat Creek, Mont.	$1.10
Big Muddy, Wyo.	0.98
Lance Creek, Wyo.	0.77

CALIFORNIA, *Posted by Standard Oil of California*

All gravities above those quoted take highest price offered in the field. Prices effective Feb. 1, 1940

Gravity	Signal Hill (Long Beach) and others*	Seal Beach	Huntington Beach	Inglewood	Playa Del Rey	Olinda Brea Canon	Athens-Rosecrans	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Greeley Canal	Coles Levee Richfield Western	Mountain View and others**	Elk Hills	Buena Vista Hills, Midway-Sunset, Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria Val. (Union Oil, Sept. 1 '39)
14-14.9	$0.65	$0.64	$0.63	$0.64	$0.65	$0.61	....	$0.65	$0.61	$0.61	$0.62	$0.63	....	....	....	$0.60	$0.60	$0.60	$0.60	$0.60	....	$0.42
15-15.9	.65	.64	.63	.64	.65	.61	....	.65	.61	.61	.62	.63	....	....	....	.60	.60	.60	.60	.60	....	.44
16-16.9	.65	.64	.63	.64	.65	.61	....	.65	.61	.61	.62	.63	....	....	....	.60	.60	.60	.60	.60	....	.45
17-17.9	.65	.64	.63	.68	.65	.61	....	.65	.61	.61	.62	.63	....	....	....	.60	.60	.60	.60	.60	....	.46
18-18.9	.65	.64	.63	.71	.65	.65	....	.68	.61	.61	.62	.63	....	....	....	.60	.60	.60	.60	.60	....	
19-19.9	.69	.64	.67	.75	.70	.69	....	.72	.61	.65	.62	.63	....	....	....	.60	.64	.64	.64	.61	$0.60	....
20-20.9	.73	.64	.72	.79	.76	.74	....	.75	.65	.69	.62	.67	....	....	....	.60	.69	.69	.69	.62	.60	....
21-21.9	.78	.64	.76	.82	.81	.78	....	.79	.69	.73	.62	.72	$0.63	....	....	.64	.74	.74	.74	.66	.60	....
22-22.9	.82	.69	.81	.86	.86	.82	....	.82	.73	.77	.66	.76	.63	....	....	.68	.79	.79	.78	.70	.63	....
23-23.9	.86	.75	.85	.89	.92	.86	$0.71	.86	.78	.82	.71	.81	.67	....	....	.71	.84	.84	.82	.74	.67	....
24-24.9	.90	.80	.90	.93	.97	.90	.77	.89	.82	.86	.75	.85	.72	....	....	.75	.89	.89	.86	.78	.71	....
25-25.9	.95	.86	.94	.96	1.02	.95	.82	.93	.86	.90	.80	.89	.77	....	....	.79	.94	.94	.90	.82	.75	....
26-26.9	.99	.91	.99	1.00	1.08	.99	.88	.96	.90	.94	.84	.94	.82	....	....	.83	.99	.99	.95	....	....	....
27-27.9	1.03	.97	1.03	1.04	....	1.03	.94	1.00	.94	.98	.89	.98	.87	$0.83	$0.92	.87	1.04	1.04	.99	....	....	....
28-28.9	1.07	1.02	1.07	1.07	....	1.07	.99	1.03	.98	....	.93	1.02	.91	.86	.96	.91	1.09	1.09	1.03	....	....	....
29-29.9	1.10	1.07	1.11	1.10	....	1.10	1.04	1.06	1.02	....	.98	1.06	.96	.90	.99	.95	1.14	1.14	1.07	....	....	....
30-30.9	1.14	1.12	1.15	1.14	....	1.14	1.09	1.09	....	....	1.02	1.10	1.01	.94	1.02	.99	1.19	1.19	1.11	....	....	....
31-31.9				1.17		1.17	1.14	Elwood Terrace			1.07	1.14	1.05	.98	1.06	1.02	1.24	1.24	....	....	....	....
32-32.9	....	....	....	1.20		1.20	1.19	F. o. b. ship.			1.11	1.18	1.09	1.02	1.09	1.06	1.29	1.29	Kettleman Hills		....	....
33-33.9	....	....	....	....		....	1.24	....	$1.21	....	1.15	1.22	1.14	1.06	1.13	1.10	1.34	1.34	....	$1.12	....	....
34-34.9	....	....	....	....		....	1.29	....	1.25	....	1.20	1.26	1.19	1.10	1.16	1.14	....	....	....	1.17	....	....
35-35.9	....	....	....	....		....	1.34	....	1.29	....	1.24	....	1.23	1.14	1.20	....	....	....	....	1.21	....	....
36-36.9	....	....	....	....		....	1.39	....	1.33	....	1.28	....	1.27	1.18	1.23	....	....	....	....	1.25	....	....
37-37.9	....	....	....	....		....	1.44	....	1.37	....	1.33	....	1.31	1.22	1.26	....	....	....	....	1.29	....	....
38-38.9	....	....	....	....		....	1.49	....	....	....	1.37	....	1.36	1.25	1.30	....	....	....	....	1.33	....	....
39-39.9	....	....	....	....		....	1.54	....	....	....	1.42	....	....	1.29	1.34	....	....	....	....	1.38	....	....
40-40.9	....	....	....	....		....	1.59	....	....	....	1.46	....	....	1.33	1.37	....	....	....	....	....	....	....
41-41.9	....	....	....	....		....	....	....	....	....	1.50	....	....	1.37	1.40	....	....	....	....	....	....	....
42-42.9	....	....	....	....		....	....	....	....	....	1.54	....	....	1.41	1.44	....	....	....	....	....	....	....
43-43.9	....	....	....	....		....	....	....	....	....	1.59	....	....	1.45	1.47	....	....	....	....	....	....	....
44-44.9	....	....	....	....		....	....	....	....	....	1.63	....	....	1.49	1.51	....	....	....	....	....	....	....
45-45.9	....	....	....	....		....	....	....	....	....	1.67	....	....	1.53	1.54	....	....	....	....	....	....	....
46-46.9	....	....	....	....		....	....	....	....	....	1.71	....	....	1.57	1.57	....	....	....	....	....	....	....
47-47.9	....	....	....	....		....	....	....	....	....	....	....	....	1.61	....	....	....	....	....	....	....	....
48-48.9	....	....	....	....		....	....	....	....	....	....	....	....	1.64	....	....	....	....	....	....	....	....

FOB Standard Pipeline

*El Segundo prices same as Signal Hill. Wilmington prices same as Signal Hill, except below 19 gravity prices are: 14-16.9, $0.60; 17-17.9, $0.62; 18-18.9, $0.64.

**Includes Newhall, McKittrick, Kern River, Round Mountain and Kern Front, schedule for which ends with 19-19.9. Mountain View schedule begins with 19-19.9.

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"STRICTLY PERSONAL"

W. M. Garrett, Houston oil man, saved his life and those of his wife and two small children recently by making a rope from bed sheets so they could escape from their burning home. Garrett awoke early one morning to find the entire lower floor of the two-story home in flames with escape by the stairway cut off. By making the "rope," however, he was able to get his family to safety. Mr. Garrett is the son of **L. P. Garrett,** vice president of Gulf Oil Corp.

* * *

Replacing **R. W. Hanna,** who retired last year because of ill health, **J. L. Hanna** was elected to the directorate of the Standard Oil Co. of California at the annual meeting held May 2. All Standard's directors and officers were re-elected.

* * *

J. Faber, formerly European manager of James B. Berry's Sons Co. and Quaker State Motor Oils, but now in business for himself, transferred his offices from Paris to 24, Arnhemschestraat, the Hague, Holland. At the time this change was made, war between France and Germany was given as the reason. Since then, Germany invaded Holland.

Major **B. A. Hardey,** independent oil operator of Shreveport, La., and a director in the Independent Petroleum Assn. of America, is scheduled to become Louisiana's conservation commissioner when Gov.-elect Sam H. Jones takes office. As conservation commissioner Major Hardey will supervise oil production in that state.

* * *

J. Z. Hill, of Gulf Oil Corp.'s purchasing department at Houston, Tex., has been nominated for the vice-presidency of District No. 2 of the National Assn. of Purchasing Agents.

* * *

B. L. Harlow, for 10 years in the materials and sales department of what is now Sinclair-Prairie Oil Marketing Co. is now in charge of sales in the company's gasoline department at Tulsa. He succeeds **H. William Clute,** who resigned May 1 to organize his own company—Clute Petroleum Co.

* * *

Dr. W. B. Emery, chief geologist for Ohio Oil Co., Finday, O., with **Frank R. Clark,** chief geologist for the Mid-Continent division, and **William F. Earl,** geologist in the Forest City basin district, made an inspection of that area recently.

Robert H. Colley (right), president of Atlantic Refining Co.; a citation from Franklin Institute for company's achievements in refining, transportation and marketing of petroleum products. Dr. Henry Butler Allen (left), secretary and director of Franklin Institute, made the presentation at a dinner April 29 in honor of Atlantic's 70th anniversary

In his new position with Indian Territory Illuminating Oil Co., **J. C. Chatfield** will have much use for his slide rule as he keeps the management in touch with economic trends through statistical studies. He will also be connected with the company's raw products sales division. Accepting the position with I.T.I.O., Mr. Chatfield resigned from the staff of NATIONAL PETROLEUM NEWS with which he had been connected for 18 years. His last assignment with NPN was as managing editor of the Refining Technology edition. He "broke in" with NPN in its Mid-Continent news bureau at Tulsa, going to Cleveland several years later as news editor. Good luck, "Chat".

* * *

Jarry Upp of the Amerada Corp. has been elected president of the Tulsa Stratigraphic Society.

* * *

O. G. Kirkpatrick and **B. E. Robertson,** of the Pure Oil Co., have been appointed to new positions. Mr. Kirkpatrick is manager of the Pure Oil Co. of the Carolinas, while Mr. Robertson, former manager of South Carolina sales, is now manager of the Pure Oil Co. of Tenn. These appointments were announced by **Wiley L. Moore,** president.

* * *

Ed Merren, Mobile, Ala., superintendent of the Port Arthur terminal for the Texas Oil Co., was recently honored when he completed 38 years of service with this organization. His service with Texas commenced in 1902, as a tugboat worker.

* * *

New Vice-President in charge of Marine Terminal operations of Arrow Petroleum Co. is **R. G. Satterley,** who recently resigned as fuel oil Sales Manager of Shell Oil Co. of Chicago. Mr. Satterley has been with Shell for the past 10 years in several marketing departments in South and Mid-West.

* * *

An engrossed resolution in honor of the memory and life work of the late J. J. Maguire, general manager of marine transportation of Socony-Vacuum Oil Co. Inc., was presented last week to **Mrs. J. J. Maguire** by **B. B. Howard,** general manager, marine department of Standard Oil Co. of New Jersey, accompanied by **Frank J. Taylor,** president of the American Merchant Marine Institute.